

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

PELOTON INTERACTIVE, INC.,
Petitioner,

v.

IFIT, INC.¹,
Patent Owner.

IPR2022-00029
Patent 7,166,062 B1

Before GEORGE R. HOSKINS, JAMES A. WORTH, and
PAUL J. KORNICZKY, *Administrative Patent Judges*.

HOSKINS, *Administrative Patent Judge*.

DECISION
Granting Institution of *Inter Partes* Review
35 U.S.C. § 314; 37 C.F.R. § 42.4

¹ Patent Owner identifies itself as “Icon Health & Fitness, Inc., which recently changed its name to iFIT, Inc.” Paper 7, 2. We have updated the case caption accordingly. If Patent Owner desires a different identification for itself in the caption, it may notify the Board by filing a Paper.

I. INTRODUCTION

Peloton Interactive, Inc. (“Petitioner”) has filed a Petition (Paper 2, “Pet.”) pursuant to 35 U.S.C. §§ 311–319 to institute an *inter partes* review of U.S. Patent No. 7,166,062 B1 (“the ’062 patent”), claims 1, 3–5, 8–11, 15, 16, 21–23, 26–28, 30, 36, 38, 40, 45, 46, and 48. iFIT, Inc. (“Patent Owner”) has filed a Preliminary Response (Paper 8, “Prelim. Resp.”) opposing institution of review.

Patent Owner asserts, in part, that institution should be discretionally denied under 35 U.S.C. § 314(a) and § 325(d). *See* Prelim. Resp. 1–2, 10–32. Via e-mail communications with the parties, we authorized additional briefing to address these arguments. Accordingly, Petitioner filed a Reply (Paper 10, “Reply”) to the Preliminary Response, and Patent Owner filed a Sur-reply (Paper 11, “Sur-reply”) to the Reply.

Applying the standard set forth in 35 U.S.C. § 314(a), which requires the Petition to demonstrate a reasonable likelihood that Petitioner would prevail with respect to at least one challenged claim, we institute, on behalf of the Director (37 C.F.R. § 42.4(a)), an *inter partes* review to determine whether Petitioner demonstrates by a preponderance of the evidence that the challenged claims are unpatentable, considering the two grounds asserted in the Petition.

II. BACKGROUND

A. *Real Parties-in-Interest and Related Proceedings*

Petitioner identifies itself as the sole real party-in-interest for Petitioner. Pet. 77. Patent Owner identifies itself as the sole real party-in-interest for Patent Owner. Paper 7, 2.

The parties identify one District Court litigation involving the '062 patent: *iFit Inc. f/k/a ICON Health & Fitness, Inc. v. Peloton Interactive, Inc.*, Case No. 1:20-cv-01386-RGA (D. Del.) (“the District Court Litigation”). Pet. 77; Paper 7, 2.

The parties also identify two other IPR proceedings challenging the '062 patent: IPR2021-00342 and IPR2022-00030. *See* Pet. 77; Paper 7, 2.

B. The '062 Patent

The '062 patent “relates to exercise equipment and, more specifically, to systems and methods for providing improved exercise devices in combination with other users and/or a live or stored trainer via a communications network.” Ex. 1001, 1:19–22. One object of the '062 patent “is to provide an improved exercise machine that facilitates live, interactive communications between a treadmill user at home and a trainer or coach in a remote location, and which enables the trainer or coach to control the operating parameters of the user’s treadmill on a live, real time basis.” *Id.* at 3:10–15.

Figure 1 of the '062 patent, reproduced below, illustrates an exercise system:

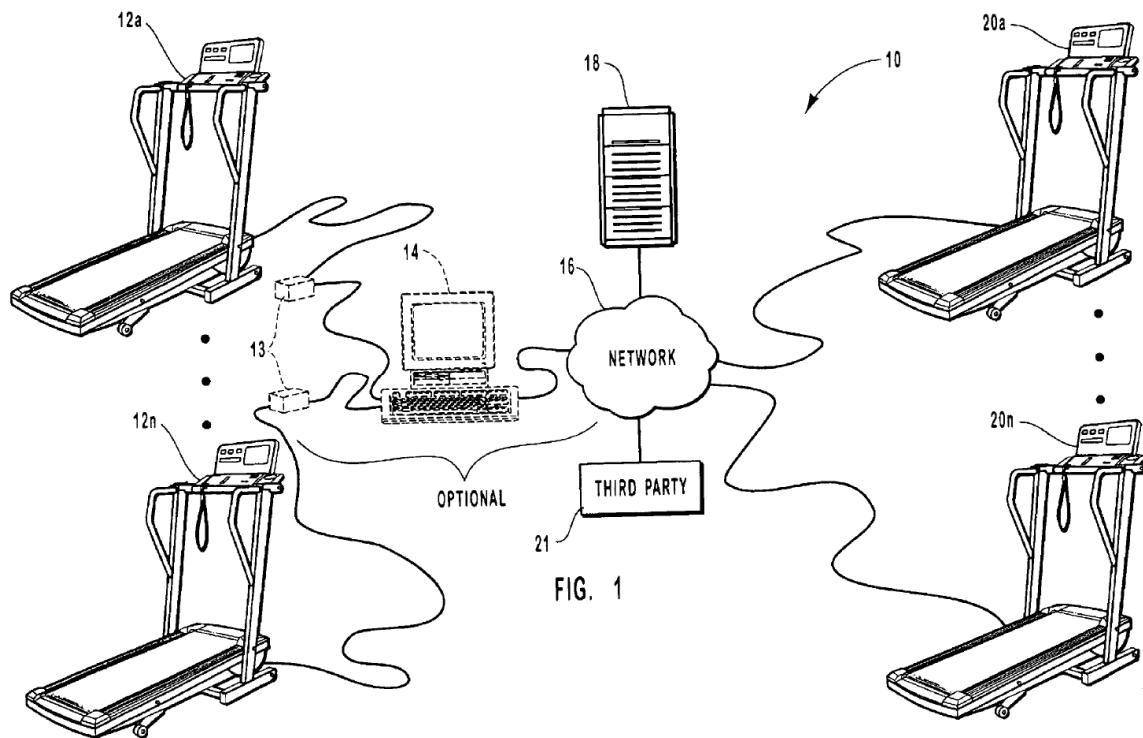


Figure 1 depicts system 10 including exercise mechanisms such as user treadmills 12a–12n, which communicate with trainer treadmills 20a–20n via translator device(s) 13, personal computer 14, and network 16. *Id.* at 6:19–31. Network 16 facilitates communication between each treadmill 12 and a trainer on treadmill 20 and/or communication system 18, such as a website. *Id.* at 6:34–36.

“Generally, system 10 enables exercise programming with control signals to be transmitted from a trainer at treadmill 20, or alternatively from communication system 18, to a user at treadmill 12.” *Id.* at 7:8–11. The control signals sent to treadmill 12 are used to control the treadmill’s operating parameters, such as speed, inclination, and resistance. *Id.* at 7:66–8:1. The control signals may be “packetized,” meaning “data that has been manipulated into one or more packets according to a packet switching protocol for transmission via network 16.” *Id.* at 16:43–46. The ’062 patent

explains that an advantage of packetized data is that computer 14, translator device 13, and treadmill 12 can optimize performance based on available bandwidth of a communication line with network 16, without interrupting real-time communication between user and trainer. *Id.* at 17:1–6.

Each treadmill 12 or 20 has a control panel. *See, e.g., id.* at Figs. 1 and 2, 8:9–17. Figure 6, reproduced below, illustrates control panel 22:

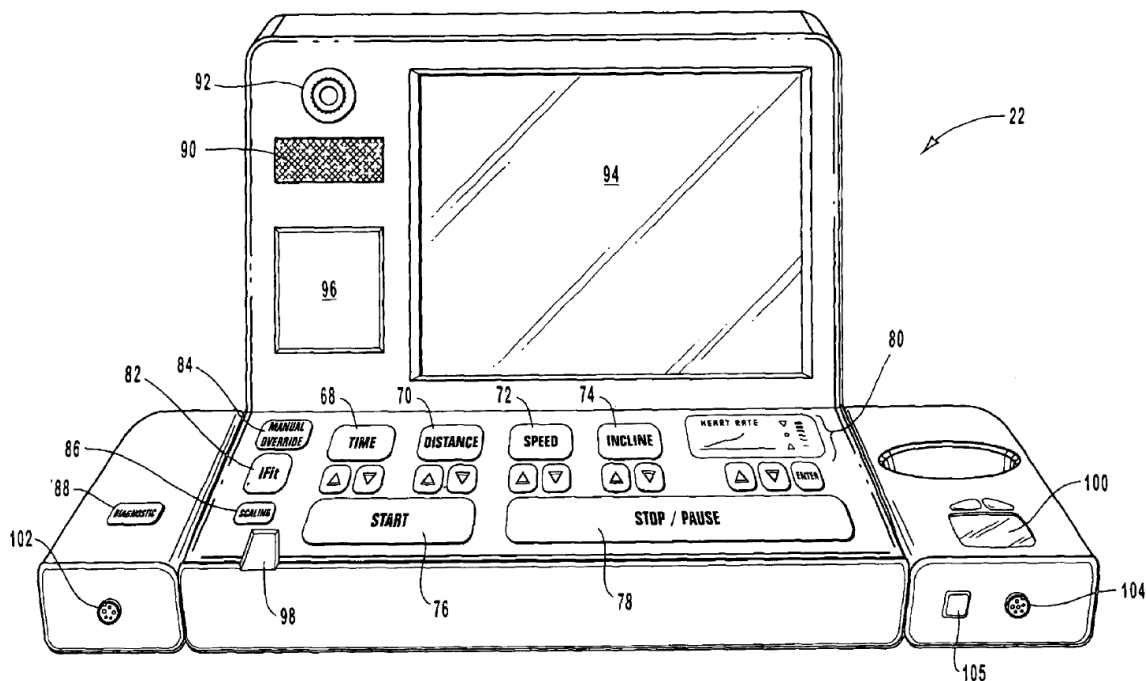


FIG. 6

Figure 6 depicts control panel 22 having various interface input devices, such as speed controls 68, incline controls 70, and time controls 72. *Id.* at 9:15–25.² Control panel 22 may include button 82 for connecting user treadmill 12 to communication system 18 and, optionally, trainer treadmill 20. *Id.* at 9:44–49. Activating the connection with communication system 18 enables treadmill 12 to be controlled during an exercise program

² The reference numbers in Figure 6 do not appear to match those of the Detailed Description. For example, it appears in Figure 6 that 68 refers to time controls, 72 refers to speed controls, and 74 refers to incline controls.

by a third party (*e.g.*, a trainer using treadmill 20, or software stored at system 18). *Id.* at 10:35–41.

One goal of the '062 patent is to motivate the users of treadmills 12a–12n to use their treadmills, by enabling virtual group exercises implemented in each user's home environment. *See id.* at 1:27–66 (Background), 2:29–33 (Summary of Invention). To improve this motivational impetus, each treadmill 12a–12n may receive via network 16 “control signals embedded in multimedia (*i.e.*, audio and/or video) programming for controlling various operating parameters of the exercise device in synchronization with the multimedia programming.” *Id.* at 2:62–67, 7:45–52. Thus, multiple users may virtually “race” each other from their respective home environments, either at the same time or at different times, including “audio and video data flows and displays that enable each competitor to view their progress against each other” such as “a racing track that shows a relative position of each competitor one with another.” *Id.* at 41:60–42:29.

C. The Challenged Claims of the '062 Patent

The present Petition challenges several claims of the '062 patent (*see* Pet. 1, 2), which involve two independent claims, claims 1 and 29. We reproduce those two claims here side-by-side:

1. An exercise device configured to enable the interaction of a user, the exercise device comprising:

(a) an exercise mechanism comprising a movable element for movement in performance

29. An exercise device configured to enable interaction of a user, the exercise device comprising:

(a) an exercise mechanism comprising a movable element for movement in performance

of exercise by a user, the exercise mechanism having one or more operating parameters;

(b) interface means, communicating with the exercise mechanism, for gathering a first signal from the user;

(c) communicating means, communicating with the interface means, for receiving a packetized second signal from a remote source over a network, the packetized second signal including one or more packetized control signals; and

(d) means, responsive to the packetized second signal, for controlling the operating parameters of the exercise mechanism.

of exercise by a user, the exercise mechanism having one or more operating parameters;

(b) at least one user interface device, communicating with the exercise mechanism, the at least one interface device gathering a first signal from the user;

(c) a communicating mechanism, communicating with the user interface device, the communicating mechanism receiving a packetized second signal from a remote source over a network, the packetized second signal including one or more packetized control signals; and

(d) a controller, responsive to the packetized second signal, configured to control the operating parameters of the exercise mechanism.

Ex. 1001, 49:49–65, 51:27–43. Claim 29 has been disclaimed by Patent Owner. *See, e.g.*, Pet. 5–6; Ex. 1002, 035–040.³

Challenged claims 3–5, 8–11, 15, 16, 21–23, and 26–28 each depend directly or indirectly from claim 1. *See* Ex. 1001, 50:6–13, 50:18–29, 50:41–47, 50:62–51:4, 51:13–26. Challenged claims 30, 36, 38, 40, 45, 46, and 48 each depend directly or indirectly from claim 29. *See id.* at 51:27–47, 51:66–52:2, 52:9–13, 52:19–22, 52:37–44, 52:51–53.

³ Our citations to the '062 patent prosecution history (Exhibit 1002) refer to the page numbers added by Petitioner (“Page ###”).

D. Prior Art and Asserted Grounds

Petitioner relies principally on the following three prior art references.
See, e.g., Pet. 2.

Name	Reference	Date ⁴	Exhibit No.
Clem	US 6,053,844	Sept. 18, 1998	1012
Hickman	US 6,059,692	Dec. 13, 1996	1013
Studor	US 6,152,856	May 22, 1998	1005

Petitioner proposes the following two grounds of unpatentability for all of the challenged claims. *See* Pet. 2.

Claims Challenged	35 U.S.C. § ⁵	References
1, 3–5, 8–11, 15, 16, 21–23, 26–28, 30, 36, 38, 40, 45, 46, 48	103	Studor and Knowledge of Person of Ordinary Skill in the Art
1, 3–5, 8–11, 15, 16, 21–23, 26–28, 30, 36, 38, 40, 45, 46, 48	103	Clem and Knowledge of Person of Ordinary Skill in the Art or Hickman

⁴ Petitioner contends these references qualify as prior art due to their respective filing dates preceding July 1999, “the earliest possible effective filing date of the ’062 [p]atent.” Pet. 1; *id.* at 11 (Studor), 12 (Clem), 14 (Hickman). Patent Owner does not presently dispute this contention. *See, e.g.*, Prelim. Resp. 3 n.2. Therefore, we identify the filing dates of the references here.

⁵ The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112-29, 125 Stat. 284, 285–88 (2011), revised 35 U.S.C. § 103 effective March 16, 2013. Based on the August 18, 2000 filing date of the ’062 patent, we apply the pre-AIA version of § 103.

E. Testimonial Evidence

Petitioner relies on the declaration testimony of Henry H. Houh, Ph.D. (Exhibit 1003) and Jim Rutberg (Ex. 1025). Patent Owner has not furnished any opposing witness testimony at this time.

III. POTENTIAL DISCRETIONARY DENIAL
UNDER 35 U.S.C. § 325(d)

Patent Owner urges us to exercise our discretion under 35 U.S.C. § 325(d) to deny institution of review, on the basis that Studor, Clem, and Hickman were all considered by the Examiner before allowing the '062 patent. *See* Prelim. Resp. 1, 10–18; Sur-reply 1–3. Petitioner provides opposing arguments. *See* Pet. 73–74; Reply 1–3. For the following reasons, we do not invoke our discretion to deny institution on this basis.

A. Legal Authority

Pursuant to 35 U.S.C. § 325(d), when determining whether to institute an *inter partes* review, we “*may take into account whether, and reject the petition . . . because, the same or substantially the same prior art or arguments previously were presented to the Office.*” 35 U.S.C. § 325(d) (emphases added). In this case, Patent Owner relies only on the “prior art” portion of § 325(d), not the “arguments” portion.

When applying § 325(d), we utilize a two-part framework. *See Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH*, IPR2019-01469, Paper 6 at 8 (PTAB Feb. 13, 2020) (precedential). First, we determine “whether the same or substantially the same art previously was presented to the Office.” *Id.* Second, if the same or substantially the same art previously was presented to the Office, we determine “whether the

petitioner has demonstrated that the Office erred in a manner material to the patentability of challenged claims.” *Id.*

In the second part of the *Advanced Bionics* framework, we consider: (i) the extent to which the asserted art was evaluated during examination, including whether the prior art was the basis for rejection; (ii) whether Petitioner has pointed out sufficiently how the Examiner erred in evaluating the asserted prior art; and (iii) the extent to which additional evidence and facts presented in the Petition warrant reconsideration of the prior art. *Id.* at 10–11 (citing factors (c), (e), and (f) of *Becton, Dickinson & Co. v. B. Braun Melsungen AG*, IPR2017-01586, Paper 8 (PTAB Dec. 15, 2017) (precedential)).

B. Factual Background

We summarize here the prosecution history of the ’062 patent as it pertains to the § 325(d) issues presented.

The ’062 patent issued from U.S. Patent Application No. 09/641,627 (“the ’627 Application”). *See* Ex. 1001, code (21). The ’627 Application was filed as a continuation-in-part of U.S. Patent Application No. 09/496,560 (“the ’560 Application”). *See id.* at code (63), 1:9–15.

The same Examiner examined the ’560 Application and the ’627 Application. *See* Ex. 2001, code (21), “*Primary Examiner*”; Ex. 1001, “*Primary Examiner*”.

1. The '560 Application

During prosecution of the '560 Application, the Examiner rejected all pending claims as anticipated by Studor. *See* Ex. 2002, 113–116.⁶ The applicant then amended the claims and argued they distinguished Studor, because they recited displaying “a topographical representation of a trail,” whereas “Studor discloses ‘actual captured video of real world courses.’” *Id.* at 136–138, 166–168 (citing Ex. 1005, 9:9–10). The claims were then allowed without further discussion of Studor. *See id.* at 181–183 (Notice of Allowance); *id.* at 185–209 (RCE with Amendment and IDS); *id.* at 224–227 (Notice of Allowance).

2. The '627 Application

As originally filed, the '627 Application included independent claim 1 (Ex. 1002, 354) and independent claim 29 (*id.* at 360) (hereafter “original claims”). These two claims eventually issued as claims 1 and 29, after being amended, in the '062 patent.

In the first Office Action, the Examiner cited Clem '124⁷ as “disclos[ing] an interactive programmable fitness interface system.” *Id.* at 195, 197. The Examiner also allowed the application, including original claims 1 and 29, and provided reasons for allowance. *Id.* at 190–196. In response to this allowance, the applicant submitted more prior art references for the Examiner to consider. *See id.* at 182–184.

⁶ Our citations to the '560 Application prosecution history (Exhibit 2002) refer to the page numbers added by Patent Owner (“Page ### of 316”).

⁷ Ex. 2003 (US 6,645,124 B1 to Clem, issued Nov. 11, 2003).

The Examiner then rejected several claims, including original claims 1 and 29, as anticipated by Hickman '537⁸. *See id.* at 168, 172. The applicant responded by amending the claims. *See id.* at 134–161. Claims 1 and 29 were amended to refer to “receiving a packetized second signal from a remote source over a network, the packetized second signal including one or more packetized control signals” (hereafter “amended claims”). *Id.* at 135 (claim 1), 141 (claim 29). The applicant argued Hickman '537 was not prior art, and the amended claims distinguished Hickman '537 for several reasons. *See id.* at 156–161.

The '062 patent was then allowed without further discussion of Hickman '537. *See id.* at 126–129 (Notice of Allowance); *id.* at 083–086 (Notice of Allowance).

C. Applying Advanced Bionics to this Case

1. First Part of Advanced Bionics

Applying the first part of the *Advanced Bionics* framework, the evidence of record establishes that Studor, Clem, and Hickman were each considered by the Examiner during prosecution of the '062 patent. The Examiner expressly identified these three references as having been considered. *See* Ex. 1002, 092 (Studor and Clem), 201 (Hickman). These three references also are identified as cited references on the face of the '062 patent. *See* Ex. 1001, code (56) (page 2).

Thus, we are not persuaded by Petitioner's argument that the Examiner “did not substantively review Studor and Clem” because the applicant “buried [them] in IDS forms filed after allowance,” and the

⁸ Ex. 2004 (US 6,749,537 B1 to Hickman, issued June 15, 2004).

Examiner “never considered” Hickman in combination with Clem. Pet. 73–74 (citing Ex. 1002, 086–094, 159); Reply 1–2. The Examiner’s initialing of these references as having been considered during prosecution of the ’062 patent demonstrates otherwise. *See Advanced Bionics*, at 7–8 (“Previously presented art includes art made of record by the Examiner, and art provided to the Office by an applicant, such as on an Information Disclosure Statement (IDS) . . .”).

Because Studor, Clem, and Hickman are “the same” as the prior art considered during prosecution of the ’062 patent under 35 U.S.C. § 325(d), we need not additionally consider whether “substantially the same” prior art was considered, for the first part of the *Advanced Bionics* framework to be satisfied.

2. *Second Part of Advanced Bionics—Studor*

Having found Studor was considered during prosecution of the ’062 patent, we turn to the second part of the *Advanced Bionics* framework. We consider whether Petitioner’s first ground (obviousness over Studor and the knowledge of a person of ordinary skill in the art) demonstrates the Office erred in a manner material to the patentability of challenged claims over Studor.

The first factor to consider here is the extent to which Studor was evaluated during examination, including whether Studor was the basis for a rejection during prosecution.

The Examiner cited Studor during prosecution of the ’560 Application, a CIP parent to the ’062 patent, for an anticipation rejection of all pending claims. *See* Ex. 2002, 113–116. The applicant

argued Studor did not anticipate the '560 Application's claims because the claims recited displaying "a topographical representation of a trail," whereas "Studor discloses 'actual captured video of real world courses.'" *Id.* at 152 (claim 1), 157 (claim 24), 159 (claim 33), 160 (claim 35), 163 (claim 43), 164 (claim 46), 167 (remarks citing Ex. 1005, 9:9–10). We infer that this argument was successful, because it was followed by allowance of the '560 Application, albeit without any statement of the reason(s) why the Studor anticipation rejection was withdrawn. *See id.* at 181.

However, none of the '062 patent claims challenged here is limited to require displaying a "topographical representation" or anything remotely similar to such a representation. *See* Ex. 1001, 49:49–52:53 (claims 1–48). Thus, the apparent reason for allowing the '560 Application does not apply to the '062 patent claims challenged here.

Further, Patent Owner has not cited and we do not discern anything in the '062 patent prosecution history (Exhibit 1002) establishing the *extent* to which Studor was considered in connection with the '062 patent claims. Patent Owner urges us to impute the Examiner's consideration of Studor in relation to the '560 Application's claims to the Examiner's later consideration of the '062 patent's claims. *See* Prelim. Resp. 15; Sur-reply 1–2. However, we are not persuaded to do so, because the claims are substantially different. For example, claim 1 of the patent that issued from the '560 Application is directed to a virtual trail system for use on an exercise apparatus comprising interface means for receiving control inputs, processor means for computing operational information based on the control inputs, feedback means for conveying the amount of exercise performed, and indicator means for displaying workout information. *See* Ex. 2001,

16:24–46. By contrast, claim 1 of the '062 patent is directed to an exercise device comprising an exercise mechanism, interface means for gathering a signal from the user, communicating means for receiving packetized control signals over a network, and means for controlling the exercise mechanism. *See* Ex. 1001, 49:49–65. Similar contrasts can be made between the other issued independent claims 23, 33, 35, 43, and 46 of the '560 Application as provided in Exhibit 2001, and independent claims 1 and 29 of the '062 patent at issue here.

The second and third factors to consider in the second part of the *Advanced Bionics* framework are whether Petitioner has pointed out sufficiently how the Examiner erred in evaluating Studor, and the extent to which additional evidence and facts presented in the Petition warrant reconsideration of Studor. “An example of a material error may include misapprehending or overlooking specific teachings of the relevant prior art where those teachings impact patentability of the challenged claims.” *Advanced Bionics*, at 8 n.9. “[I]f the record of the Office’s previous consideration of the art is not well developed or silent, then a petitioner may show the Office erred by overlooking something persuasive” in evaluating the prior art. *Id.* at 10. “If reasonable minds can disagree regarding the purported treatment of the art . . . it cannot be said that the Office erred in a manner material to patentability.” *Id.* at 9.

For reasons provided below in Section V.D, we conclude the merits of Petitioner’s first ground (obviousness over Studor and the knowledge of a person of ordinary skill in the art) are strong. The '062 patent prosecution history, on the other hand, does not address or evaluate Studor in connection with the '062 patent claims at all. Thus, for purposes of deciding whether to

invoke our discretion to deny institution under 35 U.S.C. § 325(d), we conclude Petitioner has demonstrated the Office erred in a manner material to the patentability of challenged claims by overlooking teachings in Studor that are pertinent to the '062 patent claims challenged here.

3. *Second Part of Advanced Bionics—Clem and Hickman*

Having found Clem and Hickman were considered during prosecution of the '062 patent, we turn to the second part of the *Advanced Bionics* framework. We consider whether Petitioner's second ground (obviousness over Clem and and the knowledge of a person of ordinary skill in the art or Hickman) demonstrates the Office erred in a manner material to the patentability of challenged claims over Clem and Hickman.

The first factor to consider here is the extent to which Clem and Hickman were evaluated during examination, including whether Clem and Hickman were the basis for a rejection during prosecution.

The Examiner evaluated Clem in connection with original claims 1 and 29 during the '062 patent prosecution. In particular, the first office action cited Clem '124 as “disclos[ing] an interactive programmable fitness interface system.” Ex. 1002, 195, 197. Patent Owner contends, and Petitioner does not dispute, that Clem and Clem '124 have substantially the same disclosures as they relate to the challenged claims of the '062 patent. *See, e.g.*, Prelim. Resp. 3 (arguing “Clem '124 is a continuation-in-part of Clem . . . and includes the same subject matter as Clem”), 11 (arguing the Examiner considered “Clem (via Clem '124)” during prosecution); Reply 1–3 (not challenging Patent Owner's arguments). We assume Patent Owner's contention of substantial similarity between Clem and Clem '124 is justified.

We further find that the Examiner's foregoing evaluation of Clem was contemporaneous with an initial allowance of original claims 1 and 29. *See* Ex. 1002, 190–197. This included a statement of the reason(s) for allowance, as follows:

The prior art [such as Clem] fails to show or suggest, as detailed in [original claims 1 and 29], an exercise device configured to enable the interaction of a user, comprising: an exercise mechanism comprising a movable element; interface means, communicating with the exercise mechanism, for gathering a first signal from the user; communicating means, communicating with the interface means, for receiving a packetized second signal; and means responsive to the packetized second signal, for controlling the operating parameters of the exercise mechanism.

Id. at 195. In other words, the Examiner cited essentially the entire subject matter of original claims 1 and 29 as being the reason(s) for allowance. *See id.* at 354 (original claim 1), 360 (original claim 29). This opaque analysis, combined with the one sentence finding that Clem '124 “discloses an interactive programmable fitness interface system” (*id.* at 195), does not elucidate the reasoning behind the Examiner's apparent conclusion that original claims 1 and 29 were patentable over Clem '124. Neither Clem nor Clem '124 was thereafter discussed during the '062 patent prosecution history.

Considering the second and third factors in the second part of the *Advanced Bionics* framework, for reasons provided below in Section V.E, we conclude the merits of Petitioner's second ground (obviousness over Clem and the knowledge of a person of ordinary skill in the art or Hickman) are strong. The Examiner's vague statement regarding Clem '124 during the '062 patent prosecution history, on the other hand, does not indicate that the

Office previously considered the specific disclosures of Clem relied on by Petitioner as demonstrating the unpatentability of claims 1 and 29 in the '062 patent. Thus, for purposes of deciding whether to invoke our discretion to deny institution under 35 U.S.C. § 325(d), we conclude Petitioner has demonstrated the Office erred in a manner material to the patentability of challenged claims by overlooking teachings in Clem that are pertinent to claims 1 and 29 of the '062 patent.

Turning to Hickman, we find the Examiner evaluated Hickman in connection with the original and the amended claims 1 and 29 during the '062 patent prosecution. In particular, the Examiner cited Hickman '537 as the basis for a one-sentence anticipation rejection of several claims, including original claims 1 and 29. *See* Ex. 1002, 168, 172. Patent Owner contends, and Petitioner agrees, that Hickman and Hickman '537 have substantially the same disclosures as they relate to the challenged claims of the '062 patent. *See, e.g.,* Prelim. Resp. 4 (arguing “Hickman '537 is a continuation-in-part of . . . Hickman,” and “Hickman '537 discloses the same subject matter as Hickman”), 11 (arguing the Examiner considered “Hickman (Hickman '537)” during prosecution); Pet. 74 n.4 (“For the purposes of this petition, Hickman and Hickman '537 are substantively the same.”). We therefore assume Hickman and Hickman '537 contain substantially the same disclosure.

In response to the anticipation rejection based on Hickman '537, the applicant amended claims 1 and 29 and argued Hickman '537 was not prior art, and the amended claims distinguished Hickman '537 for several reasons. *See* Ex. 1002, 135, 141, 156–161. We infer that at least one of those arguments was successful, because they were followed by allowance of the

'062 patent, albeit without any statement of the reason(s) why the Hickman '537 anticipation rejection was withdrawn. *See id.* at 126–129 (Notice of Allowance); *id.* at 083–086 (Notice of Allowance).

Nonetheless, considering the second and third factors in the second part of the *Advanced Bionics* framework, we decline to deny institution under 35 U.S.C. § 325(d) based on the Office's prior evaluation of Hickman, for two reasons.

First, the Petition does not rely on Hickman in any respect when arguing for the unpatentability of claims 1, 3, 8–11, 15, 16, 26–28, 36, 38, 40, and 48. *See* Pet. 42–72. Thus, whether the Office previously considered Hickman is simply irrelevant to the Petition's second ground challenging these fifteen claims of the '062 patent. And, we decline to exercise our discretion to deny institution as to these fifteen claims based on the Examiner's previous consideration of Clem, for reasons provided above.

Relatedly, if we institute review as to those fifteen claims, then we must also institute review of the other eight claims for which the Petition does rely on Hickman (i.e., dependent claims 4, 5, 21–23, 30, 45, and 46). *See* PTAB Consolidated Trial Practice Guide (Nov. 2019) ("CTPG")⁹, 5–6, 64 (setting forth Office policy implementing *SAS Inst., Inc. v. Iancu*, 138 S. Ct. 1348 (2018)). Concerning the interface between § 325(d) and Office policy regarding *SAS*, we ask whether § 325(d) is sufficiently implicated that its statutory purpose would be undermined by instituting on all claims and all grounds.¹⁰ In this case, we conclude that it is not, because

⁹ Available at <https://www.uspto.gov/TrialPracticeGuideConsolidated>.

¹⁰ *See SAS Q&As*, D1 (June 5, 2018) (available at https://www.uspto.gov/sites/default/files/documents/sas_qas_20180605.pdf).

Petitioner's first ground is unaffected by the Examiner's previous consideration of Hickman and Petitioner's second ground is also unaffected by the Examiner's previous consideration of Hickman as to fifteen claims, including both of the independent claims at issue in this proceeding. Thus, the Examiner's previous consideration of Hickman is potentially relevant as to only eight dependent claims.

Second, as to the potential affect of the Examiner's previous consideration of Hickman in relation to dependent claims 4, 5, 21–23, 30, 45, and 46, we conclude that we do not need to determine whether there was error in this regard. That is because, even if error has not been shown by Petitioner, § 325(d) is not sufficiently implicated because error has been shown with respect to Clem, as discussed above.

In summary, we conclude § 325(d) is not sufficiently implicated by Petitioner's use of Hickman to deny institution. Petitioner has demonstrated the Office erred by overlooking teachings in Clem that are pertinent to claims 1, 3, 8–11, 15, 16, 26–28, 36, 38, 40, and 48 of the '062 patent, and Hickman only applies to a small subset of claims.

IV. POTENTIAL DISCRETIONARY DENIAL UNDER 35 U.S.C. § 314(a)

Patent Owner asserts institution should be denied under 35 U.S.C. § 314(a), because the Petition is an improper serial attack on the '062 patent, and also in deference to the District Court Litigation. We first briefly summarize the factual background pertaining to Patent Owner's assertions on both fronts, then we discuss the reasons why we do not invoke our discretion to deny institution under § 314(a).

A. Factual Background

On October 15, 2020, Patent Owner began the District Court Litigation by filing a Complaint against Petitioner asserting, *inter alia*, infringement of the '062 patent. *See* Ex. 1010 (the Complaint). Patent Owner particularly asserted that Petitioner had “infringed and continues to infringe *one or more claims* of the '062 Patent, *including claim 47.*” *Id.* ¶ 66 (emphases added). Patent Owner also filed a contemporaneous Motion for Preliminary Injunction, based solely on Petitioner’s alleged infringement of claim 47 of the '062 patent. *See* Ex. 2005, Docket No. 7; Ex. 1027, 1–2; Ex. 2007, 4 (District Court stating claim 47 “was the only claim of any patent-in-suit at issue during the preliminary injunction proceedings”).

On December 18, 2020, Petitioner filed the petition in IPR2021-00342, challenging two claims in the '062 patent—independent claim 29 and its dependent claim 47. *See* IPR2021-00342, Paper 2, at 23.

On February 22, 2021, the District Court denied Patent Owner’s Motion for Preliminary Injunction. *See* Ex. 1027. The District Court did not address any invalidity issues in this regard. *See id.*

On July 7, 2021, in IPR2021-00342, the Board instituted review as to the patentability of claim 47 of the '062 patent. *See* Ex. 1002, 001–033 (Board Decision Granting Institution). Patent Owner had previously disclaimed claim 29 with the preliminary response, and argued against institution as to claim 47. *See id.* at 002–003. The Board nonetheless instituted review of the patentability of claim 47 on two grounds:

(1) obviousness over Brewer¹¹ and Baran¹²; and (2) obviousness over Studor. *See id.* at 006–008, 032.

On August 6, 2021, Patent Owner served its Preliminary Infringement Contentions in the District Court Litigation. *See* Ex. 2007 (District Court’s Scheduling Order), 3; Ex. 1014 (Patent Owner’s Preliminary Infringement Contentions). Petitioner alleges this was the first time Patent Owner injected ’062 patent claims other than claims 29 and 47 into the District Court Litigation. *See* Pet. 74–75. Patent Owner disputes that allegation. *See, e.g.*, Prelim. Resp. 21 (citing Ex. 1010 ¶ 66).

On September 20, 2021, in IPR2021-00342, Patent Owner filed a patent owner response, arguing why claim 47 of the ’062 patent should not be found unpatentable. *See* IPR2020-00342, Paper 27.

On October 13, 2021, Petitioner filed the present Petition and another petition in IPR2022-00030, both challenging claims of the ’062 patent. The present Petition challenges claims 1, 3–5, 8–11, 15, 16, 21–23, 26–28, 30, 36, 38, 40, 45, 46, and 48. *See* Pet. 2. The petition in IPR2022-00030 challenges claims 49, 50, 52, 54, 56, 57, 59, 61, 78–85, 87, 89, 90, and 92–95. *See* IPR2022-00030, Paper 2, at 2. Both of these petitions assert two grounds against all challenged claims: (1) obviousness over Studor and the knowledge of a person of ordinary skill in the art; and (2) obviousness over Clem and the knowledge of a person of ordinary skill in the art or Hickman. *See supra* Section II.D; IPR2022-00030, Paper 2, at 2.

During November 2021 through March 2022, the parties filed several claim construction briefs in the District Court Litigation, in preparation for a

¹¹ Ex. 1006 (US 5,645,509 to Brewer et al., issued July 8, 1997).

¹² Ex. 1007 (WO 85/03180 to Baran, published July 18, 1985).

Markman hearing set for April 14, 2022. *See, e.g.*, Ex. 2007, 5–7. This briefing culminated in a Joint Claim Construction Brief filed with the District Court on March 25, 2022, which we have entered into the record as Exhibit 3001 with the present decision.

Looking ahead in the District Court Litigation, fact discovery will close on August 25, 2022, expert discovery will close on December 22, 2022, and trial will begin on June 12, 2023. *See* Ex. 2007, 1, 7, 9.

B. Petitioner’s Three Petitions Challenging the ’062 Patent

For the following reasons, we decide not to exercise our discretion to deny institution based on Petitioner’s filing of three different petitions challenging the ’062 patent.

1. Legal Authority

Under 35 U.S.C. § 314(a), the Director has discretion to deny institution of review. *SAS*, 138 S. Ct. at 1356 (“[Section] 314(a) invests the Director with discretion on the question whether to institute review.” (emphasis omitted)); *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2140 (2016) (“[T]he agency’s decision to deny a petition is a matter committed to the Patent Office’s discretion.”); *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1367 (Fed. Cir. 2016) (“[T]he PTO is permitted, but never compelled, to institute an IPR proceeding.”).

One instance when the Board considers exercising this discretion is when multiple petitions are filed to challenge the same patent. *See General Plastic Industrial Co., Ltd. v. Canon Kabushiki Kaisha*, IPR2016-01357, Paper 19 at 15–19 (PTAB Sept. 6, 2017) (precedential). In *General Plastic*, the Board articulated a list of seven non-exclusive factors to be considered in

determining whether to exercise discretion to deny a petition in this regard. *See id.* at 16.

“[T]he Board recognizes that there may be circumstances in which more than one petition may be necessary, including, for example, when the patent owner has asserted a large number of claims in litigation . . . although this should be rare.” CTPG 59. Also, it is “unlikely that circumstances will arise where three or more petitions by a petitioner with respect to a particular patent will be appropriate.” *Id.*

2. *Applying the General Plastic Factors to this Case*

We consider each of the *General Plastic* factors. We then weigh the factors together and decide, in this case, not to exercise our discretion to deny institution, despite Petitioner having filed three petitions challenging the '062 patent.

a) *Factor 1:*

whether the same petitioner previously filed a petition directed to the same claims of the same patent

Petitioner has filed three petitions challenging claims of the '062 patent. Each petition challenges a different subset of claims: claims 29 and 47 in IPR2021-00342; claims 1, 3–5, 8–11, 15, 16, 21–23, 26–28, 30, 36, 38, 40, 45, 46, and 48 here in IPR2022-00029; and claims 49, 50, 52, 54, 56, 57, 59, 61, 78–85, 87, 89, 90, and 92–95 in IPR2022-00030.

Patent Owner asserts this factor supports denial of institution, because “**some of the same claims**” are challenged in IPR2021-00342 and here in IPR2022-00029. Prelim. Resp. 7, 20–21. In particular, claim 47 (challenged in IPR2021-00342) and claims 30, 36, 38, 40, 45, 46, and 48 (challenged in the Petition here) all depend from disclaimed independent claim 29. *Id.* at 7,

20. Further according to Patent Owner, “claims 1 and 29 differ only” in claim 1’s use of means plus function limitations, and the Petition treats claims 1 and 29 “identically.” *Id.* at 20; *id.* at 8–10 (comparing claims 1 and 29).

Petitioner argues this factor “favor[s] institution” because there is no overlap in challenged claims among the three petitions, so the present Petition “is not a true ‘follow-on petition’” under *General Plastic*. Pet. 75.

We conclude this factor slightly favors denial of institution. Petitioner is correct that no single claim is challenged in any two of Petitioner’s three petitions. At the same time, Patent Owner also is correct that the petition in IPR2021-00342 and the present Petition both directly implicate the same independent claim 29, which has been disclaimed by Patent Owner, by challenging different claims that depend from claim 29. And, Petitioner’s strategy of filing three petitions against one patent imposes a burden on Patent Owner to defend all three proceedings, and also raises the potential for abuse.

Nonetheless, in the overall weighing of all factors below, we conclude Petitioner’s explanation for why three petitions were filed in this case (factors 5, 6, and 7) satisfactorily demonstrates that Petitioner is not abusing the IPR process.

b) Factor 2:

whether at the time of filing of the first petition the petitioner knew of the prior art asserted in the second petition or should have known of it

We find that when Petitioner filed the petition in IPR2021-00342, Petitioner knew of Studor, because Petitioner relied on Studor to challenge claim 47 in that proceeding. We further find that Petitioner should have

known of Clem and Hickman at that time, because they are cited as references considered during prosecution of the '062 patent. *See* Ex. 1001, code (56) (page 2).

Patent Owner therefore argues this factor supports denial of institution. *See* Prelim. Resp. 23–24.

Petitioner argues this factor is “immaterial” because, when the petition in IPR2021-00342 was filed, only claims 29 and 47 were at issue in the District Court Litigation. Pet. 75.

We conclude this factor weighs in favor of denying institution. There is no doubt that Petitioner knew or should have known of Studor, Clem, and Hickman when Petitioner filed the petition in IPR2021-00342. Therefore, Petitioner could have presented the grounds set forth in the present Petition when that earlier petition was filed.

Nonetheless, in the overall weighing of all factors below, we conclude Petitioner’s explanation for not previously presenting the grounds set forth in the present Petition (factors 5, 6, and 7) outweighs the passage of time between the filing of the petition in IPR2021-00342 and the present Petition.

c) Factor 3:

whether at the time of filing of the second petition the petitioner already received the patent owner’s preliminary response to the first petition or received the Board’s decision on whether to institute review in the first petition

We find that when Petitioner filed the present Petition on October 13, 2021, Petitioner had already received the preliminary response in IPR2021-00342 on April 23, 2021, the Board’s decision to institute review in IPR2021-00342 on July 7, 2021, and the patent owner response in IPR2021-00342 on September 30, 2021.

Patent Owner therefore argues this factor weighs in favor of denying institution. *See* Prelim. Resp. 24–25.

Petitioner argues this factor is “neutral” because, when the petition in IPR2021-00342 was filed on December 18, 2021, only claims 29 and 47 were at issue in the District Court Litigation, so “it would have been a waste of Board and party resources for [Petitioner] to file the first petition on all 96 claims of the ’062 [p]atent.” Pet. 76. Petitioner relatedly asserts Patent Owner “made it practically impossible to file” the present Petition prior to the preliminary response and the Board’s decision to institute review in IPR2021-00342, by not identifying all the claims at issue in the District Court Litigation until August 6, 2021. *Id.*

We conclude this factor favors denial of institution. There is no doubt that Petitioner gained a potential tactical advantage by being able to review several documents from IPR2021-00342 before filing the present Petition. *See, e.g., General Plastic*, at 16–18. Patent Owner asserts Petitioner utilized such a tactical advantage in this case, in two ways.

First, the petition in IPR2021-00342 and the present Petition both present a ground based principally on Studor, which according to Patent Owner allowed Petitioner to craft the present Petition to account for weaknesses in the previous petition in relation to Studor, as gleaned from subsequent events. *See* Prelim. Resp. 5–7, 20–22; Sur-reply 6–7. We do not agree. Based on the present record, it does not appear that Petitioner has changed what it contends Studor to disclose, or not to disclose. Instead, it appears that the present Petition merely cites more disclosures of Studor in support of the same contentions concerning what Studor discloses. This is no more than what would likely be permitted in Petitioner’s Reply in

IPR2021-00342, and does not demonstrate a material change in position between the two petitions.

Second, Patent Owner argues Petitioner elected to “replace[]” the Brewer-Baran ground in IPR2021-00342 with the Clem-Hickman ground in the present Petition, to account for weaknesses in the previous petition gleaned from subsequent events. *See* Prelim. Resp. 6, 22; Sur-reply 6. In this regard, Patent Owner’s preliminary response in IPR2021-00342 related solely to the “scaling control” recited in claim 47 of the ’062 patent, which is not recited in any claim challenged in the present Petition. *See* Ex. 1002, 023 (IPR2021-00342 Decision Granting Institution stating “Patent Owner disputes only Petitioner’s contentions regarding the ‘scaling control’ of claim 47; the Preliminary Response does not address Petitioner’s contentions regarding the subject matter recited in claim 29”). Thus, Petitioner does not appear to have gained a tactical advantage in being able to review the preliminary response and the decision to institute in IPR2021-00342 when preparing the present Petition.

The patent owner response in IPR2021-00342 is, perhaps, another matter. It was filed on September 30, 2021, a few weeks prior to the present Petition’s filing on October 13, 2021. Patent Owner argued therein, for the first time, that the petition in IPR2021-00342 errs in relying on Baran for the obviousness of modifying Brewer to utilize *packetized* signals, as required by claim 29. *See* Ex. 1002, 024–025 (IPR2021-00342 Decision Granting Institution analyzing this issue); IPR2021-00342, Paper 27, 24–30 (Patent Owner Response analyzing this issue). We have not yet considered the merits of this dispute in IPR2021-00342, so we are unable to ascertain

whether this dispute may have played any role in Petitioner choosing not to include a Brewer-Baran ground in the present Petition.

We, therefore, conclude Petitioner may have gained a tactical advantage in filing three different petitions to challenge the '062 patent in this situation. Nonetheless, in the overall weighing of all factors below, we conclude Petitioner's explanation for not previously presenting the grounds set forth in the present Petition (factors 5, 6, and 7) outweighs the potential tactical advantage gained.

d) Factor 4:

the length of time that elapsed between the time the petitioner learned of the prior art asserted in the second petition and the filing of the second petition

We find that at least about 10 months elapsed between Petitioner learning of Studor, Clem, and Hickman, and the filing of the present Petition. As discussed above in Section IV.B.2(b), Petitioner knew or should have known of Studor, Clem, and Hickman at least as early as December 18, 2020, when Petitioner filed the petition in IPR2021-00342. The present Petition was filed on October 13, 2021.

Patent Owner, therefore, argues this factor supports denial of institution. *See* Prelim. Resp. 23. According to Patent Owner, “[t]he Board has found that Factor 4 weighs in favor of denial in situations involving delays that are significantly shorter than” 10 months. *Id.* (citing *Bytedance Ltd. v. Triller, Inc.*, IPR2021-00774, Paper 6 at 13 (PTAB Oct. 12, 2021) (five months); *Metall Zug AG v. Carl Zeiss Meditec AG*, IPR2020-01074, Paper 10 [sic Paper 8] at 9 (PTAB Mar. 4, 2021) (six months)).

Petitioner argues this factor is “immaterial” because, when the petition in IPR2021-00342 was filed, only claims 29 and 47 were at issue in the District Court Litigation. Pet. 75.

We conclude this factor is neutral. In the *Bytedance* decision cited by Patent Owner, the Board concluded: “Petitioner contends that the two petitions challenge distinct claim sets, *but does not provide any other explanation for the filing of two petitions or the time elapsed between them*,” so “we are not persuaded that the five-month delay was justified.” *Bytedance*, at 13 (emphasis added). In the *Metall Zug* decision cited by Patent Owner, the Board similarly concluded: “Petitioner nowhere explains the more than six-month delay in filing the instant follow-on Petition.” *Metall Zug*, at 9. By contrast, in the overall weighing of all factors in this case below, we conclude Petitioner’s explanation for not previously presenting the grounds set forth in the present Petition (factors 5, 6, and 7) outweighs the passage of time between Petitioner’s learning of Studor, Clem, and Hickman, and the filing of the present Petition.

e) *Factor 5:*
whether the petitioner provides adequate explanation for the time elapsed between the filings of multiple petitions directed to the same claims of the same patent

Petitioner asserts “denial would not be equitable” due to Patent Owner’s “strategic decision to wait nearly 10 months after” filing the District Court Complaint on October 15, 2020 “to inject 47 [sic 46] new claims into” the District Court Litigation on August 6, 2021. Pet. 74–75 (citing Ex. 1014). Petitioner also argues Petitioner “did not delay” in filing

the present Petition on October 13, 2021, “roughly two months” after the 46 claims were added to the District Court Litigation. *Id.* at 75.

Petitioner also explains how the independent claims at issue in the present Petition (claims 1 and 29) are similar to each other, and different from the independent claims at issue in IPR2022-0030 (claims 49, 78, and 85), which Petitioner asserts provides a “logical” division between the two proceedings and “requires additional space to ensure that each claim variation is discussed and fully explained.” Paper 3, 1–3. Petitioner argues: “In cases where petitions address more than 20 claims, particularly where claims introduce detail and complexity, requests to institute multiple petitions have often been granted.” *Id.* at 4.

Patent Owner asserts Petitioner lacks an adequate explanation for failing to challenge at least claim 1 along with claim 29 in IPR2021-00342, because “claims 1 and 29 differ only” in claim 1’s use of means plus function limitations, and the Petition treats claims 1 and 29 “identically.” Prelim. Resp. 20; *id.* at 8–10 (comparing claims 1 and 29). Patent Owner similarly asserts Petitioner could have challenged at least claims 30, 36, 38, 40, 45, 46, and 48 along with claim 47 in IPR2021-00342, because all of these claims depend from claim 29, and all of these claims are challenged based on Studor. *Id.* at 20–21 (citing *LONGi Green Energy Tech. Co., Ltd. v. Hanwha Solutions Corp.*, IPR2020-00047, Paper 18 at 11–12 (PTAB Apr. 27, 2020); *Bytedance*, at 12; and *Fujifilm Corp. v. Sony Corp.*, IPR2018-00060, Paper 8 at 7–9 (PTAB Apr. 19, 2018)).

Patent Owner further argues its District Court Complaint was not limited to claims 29 and 47. *See id.* at 21–22 (citing Ex. 1010 ¶ 66). Also, according to Patent Owner, following the District Court’s denial of Patent

Owner's Motion for Preliminary Injunction on February 22, 2021, "Petitioner had no reasoned basis to conclude that [Patent Owner] would limit the action to claim 47." *Id.* at 22. Patent Owner maintains that by waiting until October 13, 2021 to file the present Petition, "Petitioner has gained an unfair tactical advantage of the type" discussed in *General Plastic*, as already discussed above. *Id.* at 5–7, 22–23 (citing *General Plastic*, at 17). Patent Owner further asserts Petitioner "waited over two months to file" the present Petition after Patent Owner identified all of the asserted claims in the District Court Litigation to obtain this unfair tactical advantage. Sur-reply 6–7.

Petitioner replies that "Petitioner had no way of knowing which of the" 94 claims in the '062 patent (other than claims 29 and 47) Patent Owner would assert following the preliminary injunction phase of the District Court Litigation. Reply 5–6. Further, according to Petitioner, filing a petition to challenge all 96 claims of the '062 patent on December 18, 2020, which is what Patent Owner's position in this proceeding would require Petitioner to have done, "would have been a gross waste of Board resources." *Id.* at 6. Petitioner contends the *LONGi*, *Bytedance*, and *Fujifilm* decisions cited by Patent Owner "do not support otherwise" because in this case "the delay falls squarely on [Patent Owner], not Petitioner." *Id.*

For reasons provided below as part of weighing all factors in this case, we conclude this factor weighs heavily against exercising our discretion to deny institution, because most of Petitioner's explanations of why it filed three petitions in this case are persuasive.

*f) Factors 6 and 7:
the finite resources of the Board; and
the statutory requirement to issue a final determination not later than
1 year after institution of review*

Petitioner argues these factors favor institution, because the present Petition “does not constitute a ‘serial and repetitive attack[]’ on the ’062 [p]atent that would ‘implicate the efficiency concerns underpinning *General Plastic*.’” Pet. 76. Instead, according to Petitioner, the three petitions filed here “advance the very purpose of the Board to provide an efficient alternative forum that will conserve party and judicial resources,” based on the timing of when Patent Owner asserted particular claims in the District Court Litigation. *Id.*

Patent Owner argues these factors support denial of institution, because Petitioner’s 10-month delay in filing the present Petition “deprives the Board of its ability to consolidate this potential trial with” the other two IPR proceedings filed by Petitioner. Prelim. Resp. 25–26.

For reasons provided below as part of weighing all factors in this case, we conclude this factor weighs against exercising our discretion to deny institution, due to the efficiencies gained by Petitioner’s waiting to file the present Petition and the petition in IPR2022-00030.

3. Weighing of Factors and Conclusion

We conclude, based on several specific factual circumstances presented in this case, that Petitioner’s filing of three petitions to challenge different claims of the ’062 patent is not unreasonable or an abuse of process, but rather, promotes efficiency in seeking to resolve the parties’ disputes.

The first such circumstance is the fact that the '062 patent contains 84 claims. Petitioner asserts there are 96 claims, because the '062 patent lists 96 claims. *See* Ex. 1001, 49:49–56:65; Pet. 76–77; Reply 6. However, Exhibit 1001 also contains a Certificate of Correction dated February 19, 2008, via which claims 67–77 were “remove[d]” from the '062 patent. *See* Ex. 1001, pg. 057. This removal occurred well before Patent Owner initiated the present dispute by filing the Complaint in October 2020. So, in the context of the present dispute, the '062 patent contains 84 claims.

Nonetheless, 84 claims is still a very large number of claims to be found in one patent. This circumstance is part of what distinguishes the present case from “the vast majority of cases” in which “multiple petitions by a petitioner are not necessary.” *See also* CTPG 59 (identifying “when the patent owner has asserted a large number of claims in litigation” as one circumstance in which more than one petition may be necessary).

Further, the 84 claims of the '062 patent include five independent claims—claims 1, 29, 49, 78, and 85. Each of those independent claims differs from the others in various, potentially significant ways. For example, as Patent Owner correctly points out, the essential difference between claims 1 and 29 is that the former uses the term “means” and the latter does not. *Compare* Ex. 1001, 49:49–65 (claim 1), *with id.* at 51:27–43 (claim 29). However, in our view, this is a significant difference between claims 1 and 29, given the rigorous analytical framework we must employ to determine whether 35 U.S.C. § 112 ¶ 6 applies to these claims, and if § 112 ¶ 6 does apply then further construing and applying the claims accordingly. *See, e.g., infra* Section V.C.1–3.

The second important circumstance present in this case is the manner in which the parties' dispute has progressed over time, as summarized above in Section IV.A. In mid-December 2020, when Petitioner filed the petition in IPR2021-00342 challenging only independent claim 29 and its dependent claim 47, the parties were in the midst of litigating Patent Owner's Motion for Preliminary Injunction (*see, e.g.*, Ex. 2005, Docket Nos. 1, 7, 9, 22–35, 43–50, 55–57, 73–84). That Motion was based solely on Petitioner's alleged infringement of claim 47. *See, e.g.*, Ex. 1027, 1–2; Ex. 2007, 4.

Despite the foregoing circumstances in mid-December 2020, Patent Owner now insists that Petitioner's first petition should have challenged all 84 claims of the '062 patent, or some subset thereof that Petitioner had determined Patent Owner might eventually accuse Petitioner of having infringed at some point during the District Court Litigation. We do not agree.

To be sure, while claim 47 was the focus of Patent Owner's Motion for Preliminary Injunction, Patent Owner's Complaint asserted Petitioner "has infringed and continues to infringe *one or more claims* of the '062 Patent, *including* claim 47" Ex. 1010 ¶ 66 (emphases added). Nonetheless, this does nothing to elucidate which of the 82 claims other than claims 29 and 47 might eventually be asserted in the District Court Litigation. Patent Owner's expectation that Petitioner should have been able to forecast such claims is unreasonable—particularly given the large number of claims at issue here. We conclude, instead, that Petitioner acted reasonably in limiting its initial petition in IPR2021-00342 to the only two claims that appeared to be at issue at that time based on the preliminary injunction phase of the District Court Litigation, and taking a wait-and-see

approach as to the other claims. This tactic also promotes efficiency, in that Petitioner's later petition(s) could be limited to only the claims that were genuinely at issue for infringement in the District Court Litigation.

If we were to invoke *General Plastic* to deny institution in this case, the lesson for future petitioners facing the same or similar circumstances that faced the present Petitioner in mid-December 2020, would be to file a petition challenging *all claims* of the patent(s) being asserted in district court. In the circumstances of this case, where there are 84 claims in the '062 patent, this is an unreasonable burden to place on a petitioner, and in all likelihood an inefficient result, as later events here demonstrate.

Specifically, on August 6, 2021—7½ months after Petitioner filed the petition in IPR2021-00342 on December 18, 2020—Patent Owner asserted 48 of the 84 claims of the '062 patent (counting the disclaimed claim 29) in the District Court Litigation, including all five independent claims. *See* Ex. 2007, 3 & n.4 (District Court Order requiring Patent Owner to produce “an initial claim chart relating each accused product to the asserted claims each product allegedly infringes,” and stating “[n]o additional patent claims may be asserted absent leave of the Court and a showing of good cause.”); Ex. 1014. Thus, Petitioner's wait-and-see approach in this case reduced the number of claims at issue before the Office from 84 to 48, which promotes efficiency for the parties and the Office in limiting the scope of inquiry to the claims that are genuinely at issue for infringement in the District Court Litigation.

The ensuing 10-week period until October 13, 2021, when Petitioner filed the present Petition and the petition in IPR2022-00030, is a reasonable

amount of time to investigate, prepare, and file two IPR petitions to challenge 46 claims, including five independent claims.

As discussed above, we acknowledge that Petitioner, by waiting to file the present Petition, may have gained a tactical advantage by being able to review the patent owner response in IPR2021-00342. However, based on the present record, it appears that the principal reason behind Petitioner's delay was to wait until Patent Owner identified the claims at issue in the District Court Litigation, rather than filing serial petitions to test theories in an initial petition and adapt accordingly in a later petition. Further, Petitioner had the patent owner response in hand for only a few weeks (September 30 to October 13) before filing the present Petition. In light of these overall circumstances, the potential tactical advantage gained by Petitioner does not merit a discretionary denial of institution.

The other Board decisions cited by Patent Owner as supporting its position are inapposite to the present case. None of those cases involved a petitioner filing a first petition to challenge the claim(s) being specifically asserted by a patent owner in support of a motion of preliminary injunction in district court, and then later filing a second petition after the patent owner had identified all the claims at issue in district court. *See LONGi*, at 11–12; *Bytedance*, at 12; *Fujifilm*, at 8–9. The *LONGi* and *Bytedance* decisions, in particular, specifically noted the lack of a persuasive explanation from the petitioner for having filed multiple petitions challenging the same patent. *See LONGi*, at 11–12; *Bytedance*, at 12. By contrast, in the present case, we conclude Petitioner's explanation here is mostly persuasive.

Further, Patent Owner's cases all appear to involve significantly fewer claims than the 48 challenged claims out of a total of 84 claims at issue here.

See LONGi, at 8 (first petition challenged 3 claims, second petition challenged 13 other claims); *Bytedance*, at 2, 3 (first petition challenged 10 claims, second petition challenged 9 other claims); *Fujifilm*, at 1–2 (second petition challenged 13 claims). Particularly concerning *LONGi* in this regard, the Board there distinguished an earlier Board decision in which the patent owner had “asserted infringement of 75 of the 89 claims in the patent,” whereas in *LONGi* the petitioner “ha[d] not persuasively explained why all of its challenges to the sixteen claims of the [challenged] patent could not have been raised in the” first petition. *LONGi*, at 14–15 (discussing *Microsoft Corp. v. IPA Techs., Inc.*, IPR2019-00814, Paper 12 at 18–19 (PTAB Nov. 6, 2019)). In this case, by contrast, the large number of claims at issue is an important consideration in our decision not to exercise our discretion denying institution.

We finally determine that Petitioner’s filing of two petitions on October 13, 2021, to challenge a total of 46 claims including five independent claims, was reasonable. *See, e.g.*, CTPG 59 (“[T]he Board recognizes that there may be circumstances in which more than one petition may be necessary, including, for example, when the patent owner has asserted a large number of claims in litigation[.]”). Our rules impose a limit of 14,000 words on petitions requesting *inter partes* review. *See* 37 C.F.R. § 42.24(a)(1)(i). Based on our experience, given the circumstances of this case, we conclude that it would be very difficult for a petitioner to mount a meaningful challenge to these 46 claims, including five independent claims, in a single petition that would comply with the word count limit.

For the foregoing reasons, we decline to invoke our discretion to deny the present Petition based on Petitioner having filed three petitions to challenge different claims of the same patent.

C. The Co-Pending District Court Litigation

For the following reasons, we decide not to exercise our discretion to deny institution based on the status of the co-pending District Court Litigation.

1. Legal Authority

Under 35 U.S.C. § 314(a), the Director has discretion to deny institution of review. *SAS*, 138 S. Ct. at 1356; *Cuozzo*, 136 S. Ct. at 2140; *Harmonic*, 815 F.3d at 1367.

One instance when the Board considers exercising this discretion is when there is an early trial date in related litigation as part of assessing all relevant circumstances, including the merits, to balance considerations such as system efficiency, fairness, and patent quality. *See Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 (PTAB Mar. 20, 2020) (precedential) (“*Fintiv* Order”); *NHK Spring Co. v. Intri-Plex Technologies, Inc.*, IPR2018-00752, Paper 8 at 19–20 (PTAB Sept. 12, 2018) (precedential). The Board evaluates six factors when making this assessment. *See Fintiv* Order, at 5–6. Further, “the Board takes a holistic view of whether efficiency and integrity of the system are best served by denying or instituting review.” *Id.* at 6.

2. *Applying the Fintiv Factors to this Case*

We consider each of the *Fintiv* factors. We then weigh the factors together and decide, in this case, not to exercise our discretion to deny institution based on the status of the co-pending District Court Litigation.

a) *Factor 1:*
whether a stay exists or is likely to be granted if a proceeding is instituted

We find neither party has filed a motion to stay in the District Court Litigation, and no such stay exists. *See, e.g.,* Prelim. Resp. 28.

Petitioner asserts this factor favors granting institution because the District Court Litigation is pending before Judge Richard D. Andrews, “who routinely stays actions pending IPRs.” Reply 8. Patent Owner argues this factor favors denying institution because: no stay exists; “Petitioner identifies no evidence that a stay would be granted if a proceeding is instituted here”; and “[g]eneral disposition of cases before Judge Andrews is inapposite.” Prelim. Resp. 28; Sur-reply 8.

We conclude this factor is neutral. *See Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 15 at 12 (PTAB May 13, 2020) (informative) (“*Fintiv* DI”) (determining *Fintiv* factor 1 is neutral when neither party has requested a stay and the issue has not been addressed in the case by the district court).

b) *Factor 2:*
proximity of the court’s trial date to the Board’s projected statutory deadline

Trial is set to begin in the District Court Litigation on June 12, 2023. *See* Ex. 2007, 9. The statutory deadline for a final written decision in this proceeding will fall in April 2023.

Petitioner argues “*Fintiv* should not provide any basis for denial” because the District Court’s trial date is after our statutory deadline. Pet. 77. This “strongly favors institution” according to Petitioner. Reply 8–9.

Patent Owner argues “this factor is neutral, shifting weight to the remaining factors,” because while the trial date falls after our statutory deadline, these two dates are nonetheless “around the same time.” Prelim. Resp. 28–29 (citing *Fintiv* Order, at 9, and other Board decisions); Sur-reply 8–9.

“If the court’s trial date is earlier than the projected statutory deadline, the Board generally has weighed this fact in favor of exercising authority to deny institution under *NHK*.” *Fintiv* Order, at 9. On the other hand, “[i]f the court’s trial date is at or around the same time as the projected statutory deadline . . . , the decision whether to institute will likely implicate other factors discussed herein, such as the resources that have been invested in the parallel proceeding.” *Id.*

In this case, this factor weighs against denying institution, because our statutory deadline falls *more than six weeks before* the court’s scheduled trial date. Other Board decisions cited by Patent Owner do not persuade us otherwise. In *Motorola Mobility LLC v. Ironworks Patents, LLC*, IPR2021-00420, Paper 21 at 10–11 (PTAB Oct. 7, 2021), the Board’s statutory deadline fell *11 days after* the court’s scheduled trial date, and even so the Board did not agree with the patent owner’s position that factor 2 weighed in favor of denying institution. In *Microchip Tech. Inc. v Bell Semiconductor, LLC*, IPR2021-00147, Paper 20 at 10 (PTAB May 14, 2021), the Board’s statutory deadline fell *approximately one month after* the

court’s scheduled trial date, and even so the Board concluded factor 2 did not weigh for or against exercising discretion to deny institution.

*c) Factor 3:
investment in the parallel proceeding by the court and parties*

Patent Owner argues this factor supports denial because the parties have expended significant resources in the District Court Litigation and in IPR2021-00342. *See* Prelim. Resp. 29–31. Patent Owner points out that the parties have litigated and the Court has ruled on Patent Owner’s Motion for Preliminary Injunction, with “substantial briefing on the topic of validity (including the exchange of expert reports).” *Id.* at 30 (citing Ex. 2005, Docket Nos. 1, 7, 9, 10, 37, 43, 44, 70, 73, 74, 79, 80, 90, 91, 97, 103); *Fintiv* Order, at 9–10 (“[I]f, at the time of the institution decision, the district court has issued substantive orders related to the patent at issue in the petition, this fact favors denial[.]”). Patent Owner additionally contends “Petitioner served more than 8,800 pages of preliminary invalidity contentions . . . including claim charts based on Studor, Hickman, and Clem.” Prelim. Resp. 30 (citing Ex. 2005, Docket No. 134). And, the parties are in the midst of briefing claim construction issues in preparation for a *Markman* hearing set for April 14, 2022. *See id.* at 31; Ex. 2007, 5–7.

Patent Owner additionally asserts “Petitioner delayed filing the present Petition until after” the filing of the patent owner response in IPR2021-00342. Prelim. Resp. 30–31 (quoting *Fintiv* Order, 11–12 (“If . . . the evidence shows that the petitioner did not file the petition expeditiously, such as at or around the same time that the patent owner responds to the petitioner’s invalidity contentions, or even if the petitioner cannot explain the delay in filing its petition, these facts have favored denial.”))).

Petitioner argues this factor favors institution. *See* Reply 9. Petitioner relies on the decision to institute in IPR2021-00342 as finding that Patent Owner’s “failed motion for preliminary injunction is insufficient to flip this factor.” *Id.* (citing Ex. 1002, 011). Petitioner additionally asserts Patent Owner “ignores that the most significant work in the [District Court Litigation] (fact discovery, expert discovery, dispositive motions, and trial) still lies ahead.” *Id.* (citing *Juniper Networks, Inc. v. Huawei Digit. Techs. (Cheng Du) Co.*, IPR2020-01130, Paper 13 at 13 (Jan. 22, 2021); *Sand Revolution II, LLC v. Continental Intermodal Grp. – Trucking LLC*, IPR2019-01393, Paper 24 at 11 (June 16, 2020) (informative)).

Patent Owner replies that the *Juniper Networks* and *Sand Revolution* decisions cited by Petitioner are inapposite to the facts presented here, where “the parties have briefed dispositive issues and the court has made a determination on the merits.” Sur-reply 9. Patent Owner does not specify the briefing(s) or the determination(s) that are being referenced in this regard. *See id.*

“[I]f, at the time of the institution decision, the district court has issued substantive orders related to the patent at issue in the petition, this fact favors denial. Likewise, district court claim construction orders may indicate that the court and parties have invested sufficient time in the parallel proceeding to favor denial.” *Fintiv* Order, at 9–10. A petitioner’s diligence or delay in filing a petition may also be relevant in evaluating this factor. *Id.* at 11–12.

We determine this factor does not weigh in favor of discretionary denial. The briefing and resolution of the Motion for Preliminary Injunction represents investment by the District Court and the parties, which is entitled

to some weight in our discretionary denial analysis. The argument and expert testimony related to validity that the parties presented in connection with that Motion is of particular relevance here. However, the District Court found it unnecessary to reach the issue of validity in its ruling on the Motion, which undercuts the weight that this factor carries. *See* Ex. 1027.

Specifically, the District Court determined: (1) Patent Owner’s “cursory showing on infringement” did not carry Patent Owner’s “burden to demonstrate a likelihood of success on the merits as to infringement” (*id.* at 3–8); and (2) Patent Owner had not demonstrated it was likely to suffer irreparable harm (*id.* at 8–13).

Moreover, the parties do not point us to any issues that the District Court has already resolved that will be duplicated in this proceeding. We acknowledge the Court’s *Markman* hearing is set for April 14, 2022. But, the District Court has not yet construed any claims of the ’062 patent in a way that might impact the present proceeding, based on the present record. *See, e.g.*, Ex. 1027, 4–5 (construing claim 29 in relation to the parties’ competing contentions on infringement, but not validity).

More generally, the parties’ efforts to date in the District Court Litigation do not appear to have advanced resolution of the parties’ dispute in any meaningful way. Yes, contentions have been exchanged as part of the discovery process, but the fact discovery cutoff is not until August 25, 2022, and the expert discovery cutoff is not until December 22, 2022. *See* Ex. 2007, 1, 7. Thus, much further work remains in the District Court Litigation not only in general, but also specifically concerning invalidity. The facts here are similar to those in two of the Board’s informative decisions, which concluded *Fintiv* factor 3 weighs only marginally, if at all,

in favor of exercising discretion to deny. *See Sand Revolution*, at 10–11; *Fintiv* DI, at 13–14.

Our evaluation of *Fintiv* factor 3 also takes into account how promptly Petitioner filed its Petition. Here, as discussed above in Section IV.B, we conclude Petitioner acted reasonably promptly in this regard, given the overall circumstances presented in this case. *See, e.g., Fintiv* Order, at 11 (“If the evidence shows that the petitioner filed the petition expeditiously, *such as promptly after becoming aware of the claims being asserted*, this fact has weighed against exercising the authority to deny institution” (emphasis added)). Petitioner filed the present Petition and the companion petition in IPR2022-00030 about 10 weeks after Patent Owner notified Petitioner of the 48 claims in the ’062 patent being asserted in the District Court Litigation, including five independent claims. This shows reasonable diligence that weighs against discretionary denial.

With these considerations in mind, we conclude *Fintiv* factor 3 does not weigh in favor of discretionary denial in the overall circumstances presented here.

*d) Factor 4:
overlap between issues raised in the petition and in the parallel proceeding*

Petitioner contends this factor “strongly favors institution” because “Petitioner has agreed to a *Sand Revolution* stipulation, eliminating any overlap.” Reply 9 (citing Ex. 1028). In the referenced stipulation, Petitioner states that if the Board institutes review in this proceeding, then Petitioner “*will not pursue the instituted invalidity grounds in*” the District Court Litigation. Ex. 1028 (emphasis added).

Patent Owner argues “[t]his factor weighs heavily in favor of denial” because Petitioner asserts the same prior art (i.e., Studor, Clem, and Hickman) to support its invalidity contentions here and in the District Court Litigation. Prelim. Resp. 31 (citing *Fintiv* Order, at 12). Further according to Patent Owner: “Petitioner’s narrow *Sand Revolution* stipulation is insufficient to assuage concerns over duplicative efforts,” because Petitioner “has raised invalidity grounds that stretch thousands of pages” in the District Court Litigation, including the grounds based on the prior art cited in this proceeding. Sur-reply 9–10 (citing *Canadian Solar Inc. v. The Solaria Corp.*, IPR2021-00659, Paper 14, at 14 (Sept. 30, 2021)); *see also* Prelim. Resp. 30 (citing Ex. 2005, Docket No. 134, as demonstrating “Petitioner served more than 8,800 pages of preliminary invalidity contentions . . . including claim charts based on Studor, Hickman, and Clem”). Patent Owner further asserts Petitioner’s stipulation “would permit [Petitioner] to pursue grounds based on art that is cumulative to that asserted in the Petition.” Sur-reply 10.

Under *Fintiv* factor 4, “if the petition includes the same or substantially the same claims, grounds, arguments, and evidence as presented in the parallel proceeding, this fact has favored denial.” *Fintiv* Order, at 12. This factor addresses “concerns of inefficiency and the possibility of conflicting decisions” when the same issues and arguments are concurrently addressed in two different forums. *Id.*; *see also Sand Revolution*, at 11. Such concerns are mitigated when a petitioner agrees not to pursue in the parallel proceeding the grounds it is pursuing in its petition. *See Sand Revolution*, at 11. The breadth of such a stipulation affects the weight it is given in the discretionary denial analysis. *Id.* at 12 n.5. For

example, in *Sand Revolution*, the Board found “this factor weighs marginally in favor of not exercising discretion to deny institution” when the petitioner had stipulated not to pursue in district court the same grounds presented in its petition. *Id.* at 11–12; *see also Google LLC v. Ikorongo Tech. LLC*, IPR2021-00204, Paper 13 at 10–12 (PTAB June 7, 2021) (finding this factor weighed marginally in favor of not exercising discretion to deny institution based on petitioner’s stipulation not to pursue in the parallel district court case “the specific grounds identified in this Petition”). But in *Sotera Wireless, Inc. v. Masimo Corp.*, IPR2020-01019, Paper 12 (PTAB Dec. 1, 2020) (precedential), the Board explained “this factor weighs strongly in favor of not exercising discretion to deny institution” when the petitioner stipulated not to pursue in the parallel district court case “any ground raised or that could have been reasonably raised” in an IPR. *Id.* at 18–19.

The narrowness of Petitioner’s stipulation diminishes the weight that the stipulation carries, relative to the stipulation proffered in *Sotera*. Still, consistent with the approach taken in *Sand Revolution* and *Ikorongo*, which addressed similarly narrow stipulations, we find the stipulation causes this factor to weigh marginally against discretionary denial. *Sand Revolution*, at 11; *Ikorongo*, at 10–12.

e) *Factor 5:*
whether the petitioner and the defendant in the parallel proceeding
are the same party

The parties in this proceeding are the same as in the District Court Litigation. *See* Prelim. Resp. 32. This factor weighs against discretionary denial, because in this case our statutory deadline falls more than six weeks

before the court’s scheduled trial date. We agree with our colleagues’ conclusion that “this factor favors denial if trial precedes the Board’s Final Written Decision and favors institution if the opposite is true,” “due to the 35 U.S.C. 315(e)(2) estoppel provision.” *Huawei Techs. Co., Ltd. v. WSOU Invs., LLC*, IPR2021-00225, Paper 11 at 13–14 (PTAB June 14, 2021); *see also Google LLC v. Parus Holdings, Inc.*, IPR2020-00846, Paper 9 at 20–21 (PTAB Oct. 21, 2020) (“Petitioner is the defendant in the parallel proceeding. This fact could weigh either in favor of, or against, exercising discretion to deny institution, depending on which tribunal was likely to address the challenged patent first.”).

*f) Factor 6:
other circumstances that impact the Board’s exercise of discretion,
including the merits*

The merits of the petition’s challenges are part of the “balanced assessment of all the relevant circumstances” that the Board undertakes in the *Fintiv* discretionary denial analysis. *Fintiv* Order, at 14–16. Unsurprisingly, the parties take different views on the merits of the Petition: Petitioner argues that the merits of the challenges presented in the Petition are strong, which weighs against discretionary denial, while Patent Owner argues that the merits are weak, weighing in favor of discretionary denial. Reply 9; Prelim. Resp. 32. As discussed in greater detail below, based on the current record, we find the merits of the Petition’s challenges appear strong. *See infra* Sections V.D and V.E.

Patent Owner argues *Fintiv* factor 6 weighs in favor of discretionary denial based on “the tactical advantages that Petitioner would unfairly gain from its delay in filing” the present Petition after the petition in

IPR2021-00342. Prelim. Resp. 32. As discussed above in connection with our *General Plastic* analysis, we are not persuaded that the timing of Petitioner’s three petitions weighs in favor of discretionary denial. As we have already weighed that timing issue as part of the *General Plastic* analysis, we do not repeat it here as part of *Fintiv* factor 6.

Thus, this factor weighs against discretionary denial.

3. Conclusion

We take “a holistic view of whether efficiency and integrity of the system are best served by denying or instituting review.” *Fintiv* Order, at 6. We are not persuaded that the interests of efficiency and integrity of the system would be best served by invoking 35 U.S.C. § 314(a) to deny institution of a potentially meritorious Petition. Based on the record before us, we determine the facts of this case do not warrant discretionary denial.

V. ANALYSIS OF PETITIONER’S PROPOSED GROUNDS

A. Law of Obviousness

A patent claim is unpatentable under 35 U.S.C. § 103 if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) objective evidence of

nonobviousness, if made available in the record.¹³ *See Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

B. Level of Ordinary Skill in the Art

Petitioner contends a person having ordinary skill in the art pertaining to the '062 patent “would have had a working knowledge of . . . remotely controlled exercise devices” pertinent to the '062 patent, as well as “a four-year degree from an accredited institution (a Bachelor of Science (‘B.S.’) degree) in computer science, computer engineering, electrical engineering, or the equivalent and experience with, or exposure to, computer software and computer networks.” Pet. 6; Ex. 1003 ¶¶ 32–35. Further: “Additional graduate education could substitute for professional experience, while significant experience in the field might substitute for formal education.” Pet. 6; Ex. 1003 ¶ 35. This is identical to Petitioner’s position in IPR2021-00342 (Paper 2, 14–15).

In the present proceeding, Petitioner additionally asserts “[c]ertain challenged claims relate to exercise training,” and for these claims, a person of ordinary skill in the art “would have had at least a Bachelor’s degree in the exercise field (e.g., Exercise Physiology or similar) or at least two years’ experience in the exercise field (as, e.g., personal trainer, coach, fitness instructor, etc.).” Pet. 6; Ex. 1003 ¶¶ 36–38; Ex. 1025 ¶¶ 27–40. Petitioner does not identify which claims these might be (*see* Pet. 6), but Patent Owner

¹³ The Petition briefly discusses the possibility of Patent Owner relying on objective evidence of nonobviousness. *See* Pet. 73. The Preliminary Response does not do so. *See, e.g.*, Prelim. Resp. 40–53. On this record, there is no objective evidence of nonobviousness for us to consider.

thinks they may be claims 4, 5, 8, 21–23, 27, 28, 30, and 38 (*see* Prelim. Resp. 41).

Patent Owner objects to the portion of Petitioner’s ordinary skill formulation directed to exercise training education and experience. *See* Prelim. Resp. 41–45. Patent Owner asserts this is a litigation tactic designed to attack potential witness testimony Patent Owner might proffer. *Id.* at 41. Patent Owner also argues the evidence does not support including exercise training education and experience as part of ordinary skill relating to the ’062 patent, as is demonstrated by Petitioner’s position in IPR2021-00342, and the testimony of Petitioner’s expert witness in the District Court Litigation. *Id.* at 41–44 (citing IPR2021-00342 (Paper 2, 14–15; Ex. 1003 ¶ 34); Ex. 1003 ¶¶ 35–39; Ex. 2005, “Dkt. 64, pp. 13–14”). Patent Owner further asserts the Board rejected a similar argument from Petitioner in IPR2020-01186 challenging Petitioner’s U.S. Patent No. 10,322,315 B2 (claims 1–20) and IPR2020-01187 challenging Petitioner’s U.S. Patent No. 10,022,590 B2 (claims 1–20). *See* Prelim. Resp. 44. Patent Owner “submits that no specific articulation of the level of skill is required for purposes of determining whether to institute trial,” but if we find otherwise, then we should adopt Petitioner’s formulation except for the exercise training education and experience component. *See id.* at 44–45.

Based on our review of the record at this preliminary stage, we conclude the first component of Petitioner’s formulation appears to be consistent with the level of skill reflected in the ’062 patent and the prior art of record, and is not presently disputed by Patent Owner. We, therefore, adopt the first component of Petitioner’s proposed definition of the level of

ordinary skill in the art as summarized above, and apply it in our analysis below.

We further conclude that whether we additionally adopt the second component of Petitioner’s formulation, or not, does not affect the result of this decision. We would grant institution of review either way. Therefore, we need not resolve the parties’ dispute in this regard.

C. Claim Construction

We interpret the ’062 patent claims “using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. 282(b).” 37 C.F.R. § 42.100(b). This “includ[es] construing the claim in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent.” *Id.*

1. Construing Means-Plus-Function Claim Limitations

“An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.” 35 U.S.C. § 112 ¶ 6.

“[U]se of the word ‘means’ in a claim element creates a rebuttable presumption that § 112, para. 6 applies.” *Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1347–49 (Fed. Cir. 2015) (en banc). Conversely, “the failure to use the word ‘means’ also creates a rebuttable presumption . . . that § 112, para. 6 does not apply.” *Id.* at 1348. “[T]he essential inquiry is not merely the presence or absence of the word ‘means’ but whether the words of the

claim are understood by persons of ordinary skill in the art to have a sufficiently definite meaning as the name for structure.” *Id.* If not, then § 112 ¶ 6 applies. *Id.*

If § 112 ¶ 6 applies, then the first step in construing the claim limitation is to define the function recited in the claim. *See In re Aoyama*, 656 F.3d 1293, 1296–97 (Fed. Cir. 2011). “Where there are multiple claimed functions . . . the patentee must disclose adequate corresponding structure to perform *all* of the claimed functions.” *Media Rights Techs., Inc. v. Cap. One Financial Corp.*, 800 F.3d 1366, 1374 (Fed. Cir. 2015).

The second step is to look at the patent specification and identify the corresponding structure for the claimed function(s). *See Aoyama*, 656 F.3d at 1297. This requires that “the specification or prosecution history clearly links or associates that structure to the function recited in the claim.” *Id.*

We then construe the claim limitation to cover the corresponding structure, and equivalents thereof. *See* 35 U.S.C. § 112 ¶ 6.

2. *Independent Claim 1*

Petitioner asserts claim 1 “include[s] certain terms that invoke, or may invoke, 35 U.S.C. § 112, ¶ 6.” Pet. 6. These terms are “interface means,” “communicating means,” and “means . . . for controlling.” *See id.* at 6–10. We consider each in turn.

a) *“interface means”*

Claim 1 recites “interface means, communicating with the exercise mechanism, for gathering a first signal from the user.” Ex. 1001, 49:56–57.

The Petition assumes this limitation is a means-plus-function limitation—without taking a position on that issue—and provides a

corresponding construction. *See* Pet. 6–8. The Petition identifies the claimed function as “communicating with the exercise mechanism, for gathering a first signal from the user.” *Id.* at 7. The Petition identifies the corresponding structure as “a user interface,” which “includes the diagnostic control, interface devices and input devices, as well as a voice activated interface, a touch sensitive interface, and an automatic monitoring system.” *Id.* at 7–8 (citing Ex. 1001, 9:17–42, 12:3–7, 23:10–14, 31:14–18, 31:27–31, 31:36–40); Ex. 1003 ¶¶ 51–53.

The Preliminary Response argues “the Board need not specially construe any [claim terms] because [the challenged claims] are not shown to be obvious regardless of construction.” Prelim. Resp. 40–41. Patent Owner also states the parties “have disputed the construction of certain terms” in the District Court Litigation. *Id.* at 40 (citing Ex. 2006). Accordingly, we have reviewed the Joint Claim Construction Brief filed with the District Court (Exhibit 3001).

Upon review of the foregoing, we first conclude the “interface means” limitation is a means-plus-function limitation under § 112 ¶ 6. Use of the word “means” creates a rebuttable presumption that § 112 ¶ 6 applies. *Williamson*, 792 F.3d at 1347–49. Further, the words of the claim are not understood by persons of ordinary skill in the art to have a sufficiently definite meaning as the name for structure. The only claim term that might potentially connote structure in this regard is the term “interface.” But, we discern no evidence in this proceeding that might suggest this term connotes any particular structure to a person of ordinary skill in the art. Moreover, the parties have agreed in the District Court Litigation that the “interface means”

limitation is a means-plus-function limitation under § 112 ¶ 6. *See* Ex. 3001, 21.

Applying § 112 ¶ 6, the parties agree the claimed function includes, at least, “gathering a first signal from the user.” *See* Pet. 7; Ex. 3001, 21. We concur. *See* Ex. 1001, 49:56–57.

In the Petition and in the District Court Litigation, Petitioner contends the claimed function additionally includes “communicating with the exercise mechanism.” Pet. 7; Ex. 3001, 21, 24–27, 30. The Preliminary Response is silent on this issue, but in the District Court Litigation, Patent Owner contends this claim phrase “describ[es] the ‘interface means’ itself (e.g. structure)” and “modifies the structure” by “denot[ing] a physical relationship,” so it “is not a second function.” *See* Prelim. Resp. 40–41; Ex. 3001, 21–24, 27–29.

We need not resolve this dispute in the present decision. We would grant institution of review regardless of which position we might adopt, for two reasons. First, determining the corresponding structure does not appear to be affected by the outcome of this dispute. Second, even if we were to adopt Petitioner’s more limited construction of the claimed function(s), it appears that Studor’s and Clem’s respectively alleged interface means would still perform all of the claimed functions, for reasons provided below. *See infra* Sections V.D.2 and V.E.2.

We must next identify the ’062 patent Specification’s disclosure of corresponding structure for the claimed function(s). The parties agree this corresponding structure is a “user interface,” and they cite several Specification passages in support. *See* Pet. 7–8; Ex. 3001, 21; Ex. 2006, 8. However, we are not persuaded by this position, because it simply replaces

one functional term (“interface means”) with another functional term (“user interface”), when the requisite inquiry is to identify corresponding *structure* in the Specification. Instead of structure, the Specification illustrates user interface 262 as a functional box in Figure 11. *See* Ex. 1001, Fig. 11, 5:34–35, 31:10–44. Further, the conclusory nature of the parties’ citation to various Specification passages does not elucidate what structural detail(s) might correspond to the claimed function(s). *See* Pet. 7–8; Ex. 2006, 8.

Nonetheless, for the present decision, all that we need to determine is whether Petitioner’s reliance on Studor as disclosing the interface means (*see* Pet. 18–21), and on Clem as rendering the interface means obvious (*see id.* at 44–47), is sufficiently articulated and supported by evidence to justify institution of review. Focusing on those limited issues, we conclude the ’062 patent Specification provides corresponding structure for the claimed function(s) of the interface means as, *at least*, a keyboard such as control panel 22 shown in Figures 2 and 6, or external keyboard 103 shown in Figure 2. *See* Ex. 1001, 9:13–43, 12:34–56, 17:57–61, 31:10–31. Corresponding structure also includes a mouse, such as mouse 100 shown in Figure 6. *See id.* at 12:34–56, 31:10–32. We acknowledge the ’062 patent Specification likely provides *additional* corresponding structures, but for purposes of the present decision, we need not determine what these additional structures might be.

In summary, we conclude the interface means of claim 1 is a means-plus-function limitation, which covers at least a keyboard or a mouse, and equivalents thereof under § 112 ¶ 6. We encourage the parties to address this issue in future briefing.

b) “communicating means”

Claim 1 recites “communicating means, communicating with the interface means, for receiving a packetized second signal from a remote source over a network, the packetized second signal including one or more packetized control signals.” Ex. 1001, 49:58–62.

The Petition assumes this limitation is a means-plus-function limitation—without taking a position on that issue—and provides a corresponding construction. *See* Pet. 6, 8–9. The Petition identifies the claimed function as “communicating with the interface means, for receiving a packetized second signal from a remote source over a network, the packetized second signal including one or more packetized control signals.” *Id.* at 8. The Petition identifies the corresponding structure as “a network interface or a modem.” *Id.* at 8–9 (citing Ex. 1001, 16:10–17, 18:15–17); Ex. 1003 ¶ 56.

The Preliminary Response does not provide a claim construction position, but notes the parties have disputed construction of certain claim terms in the District Court Litigation. *See* Prelim. Resp. 40–41.

Upon review of the foregoing, we first conclude the “communicating means” limitation is a means-plus-function limitation under § 112 ¶ 6. Use of the word “means” creates a rebuttable presumption that § 112 ¶ 6 applies. *Williamson*, 792 F.3d at 1347–49. Further, the words of the claim are not understood by persons of ordinary skill in the art to have a sufficiently definite meaning as the name for structure. And, the parties have agreed in the District Court Litigation that the “communicating means” limitation is a means-plus-function limitation under § 112 ¶ 6. *See* Ex. 3001, 31.

Applying § 112 ¶ 6, the parties agree the claimed function includes, at least, “receiving a packetized second signal from a remote source over a network, the packetized second signal including one or more packetized control signals.” *See* Pet. 8; Ex. 3001, 31. We concur. *See* Ex. 1001, 49:58–62.

In the Petition and in the District Court Litigation, Petitioner contends the claimed function additionally includes “communicating with the interface means.” Pet. 8; Ex. 3001, 31, 32–33, 36. The Preliminary Response is silent on this issue, but in the District Court Litigation, Patent Owner contends this claim phrase describes the communicating means itself and modifies the structure by denoting a physical relationship, so it does not recite function. *See* Prelim. Resp. 40–41; Ex. 3001, 31, 35.

We need not resolve this dispute in the present decision. We would grant institution of review regardless of which position we might adopt, for two reasons. First, determining the corresponding structure does not appear to be affected by the outcome of this dispute. Second, even if we were to adopt Petitioner’s more limited construction of the claimed function(s), it appears that Studor’s and Clem’s respectively alleged communicating means would still perform all of the claimed functions, for reasons provided below. *See infra* Sections V.D.2 and V.E.2.

We must next identify the ’062 patent Specification’s disclosure of corresponding structure for the claimed function(s). Petitioner contends the corresponding structure is a network interface or a modem. *See* Pet. 8–9 (citing Ex. 1001, 16:10–17, 18:15–17); Ex. 3001, 31, 33–34, 36 (citing Ex. 1001, 14:39–44, 16:10–21, 24:10–29, 24:66–25:4, 32:65–33:3). The Preliminary Response is silent on this issue, but in the District Court

Litigation, Patent Owner contends the corresponding structure is a computer. *See* Prelim. Resp. 40–41; Ex. 3001, 31, 32, 35–36 (citing Ex. 1001, 16:10–39, 17:57–59, 18:27–30).

For the present decision, all that we need to determine is whether Petitioner’s reliance on Studor and Clem as separately rendering the communicating means obvious (*see* Pet. 21–24, 47–50) is sufficiently articulated and supported by evidence to justify institution of review. Focusing on those limited issues, we need not resolve the parties’ dispute as to corresponding structure in the present decision. We would grant institution of review regardless of which position we might adopt, because it appears that Studor’s and Clem’s respectively alleged communicating means satisfy both parties’ formulations of corresponding structure, for reasons provided below. *See infra* Sections V.D.2 and V.E.2.

In summary, we conclude the communicating means of claim 1 is a means-plus-function limitation, but we do not need to construe the claim further to decide whether to grant institution of review. We encourage the parties to address this issue in future briefing.

c) “means . . . for controlling”

Claim 1 recites “means, responsive to the packetized second signal, for controlling the operating parameters of the exercise mechanism.” Ex. 1001, 49:63–65.

The Petition assumes this limitation is a means-plus-function limitation—without taking a position on that issue—and provides a corresponding construction. *See* Pet. 6, 9–10. The Petition identifies the claimed function as “responsive to the packetized second signal, for

controlling the operating parameters of the exercise mechanism.” *Id.* at 9. The Petition identifies the corresponding structure as “a controller.” *Id.* at 9–10 (citing Ex. 1001, 33:22–34); Ex. 1003 ¶ 59.

The Preliminary Response does not provide a claim construction position, but notes the parties have disputed construction of certain claim terms in the District Court Litigation. *See* Prelim. Resp. 40–41.

Upon review of the foregoing, we first conclude the “means . . . for controlling” limitation is a means-plus-function limitation under § 112 ¶ 6. Use of the word “means” creates a rebuttable presumption that § 112 ¶ 6 applies. *Williamson*, 792 F.3d at 1347–49. Further, the words of the claim are not understood by persons of ordinary skill in the art to have a sufficiently definite meaning as the name for structure. And, the parties have agreed in the District Court Litigation that the “means . . . for controlling” limitation is a means-plus-function limitation under § 112 ¶ 6. *See* Ex. 3001, 37.

Applying § 112 ¶ 6, the parties agree the claimed function includes, at least, “controlling the operating parameters of the exercise mechanism.” *See* Pet. 9; Ex. 3001, 37. We concur. *See* Ex. 1001, 49:63–65.

In the Petition and in the District Court Litigation, Petitioner contends the claimed function additionally includes “responding to the packetized second signal.” Pet. 9; Ex. 3001, 37, 40–41, 51–52. The Preliminary Response is silent on this issue, but in the District Court Litigation, Patent Owner contends this claim phrase is “superfluous” and “merely a characteristic of the means and is not part of the function itself.” *See* Prelim. Resp. 40–41; Ex. 3001, 37–38, 46–47.

We need not resolve this dispute in the present decision. We would grant institution of review regardless of which position we might adopt, for two reasons. First, determining the corresponding structure does not appear to be affected by the outcome of this dispute. Second, even if we were to adopt Petitioner’s more limited construction of the claimed function(s), it appears that Studor’s and Clem’s respectively alleged means for controlling would still perform all of the claimed functions, for reasons provided below. *See infra* Sections V.D.2 and V.E.2.

We must next identify the ’062 patent Specification’s disclosure of corresponding structure for the claimed function(s). In the Petition, Petitioner identifies “a controller” as the corresponding structure. Pet. 9–10 (citing Ex. 1001, 33:22–34). In the District Court Litigation, Petitioner more specifically identifies “a general-purpose computer or processor” as the corresponding structure, and argues “[t]his term is indefinite” because the Specification fails to disclose an algorithm to accomplish the claimed function. Ex. 3001, 37, 41–46, 52–55.

The Preliminary Response is silent on this issue, but in the District Court Litigation, Patent Owner contends the corresponding structure is “a controller (motor, solenoid, or other electrically driven actuator),” and the claim is not indefinite. *See* Prelim. Resp. 40–41; Ex. 3001, 37, 38–40, 47–51.

For the present decision, all that we need to determine is whether Petitioner’s reliance on Studor and Clem as separately rendering the means for controlling obvious (*see* Pet. 24–25, 50–51) is sufficiently articulated and supported by evidence to justify institution of review. Focusing on those limited issues, we need not resolve the parties’ dispute as to corresponding

structure in the present decision. We would grant institution of review regardless of which position we might adopt, because it appears that Studor’s and Clem’s respectively alleged means for controlling satisfy both parties’ formulations of corresponding structure, for reasons provided below. *See infra* Sections V.D.2 and V.E.2.

In summary, we conclude the means for controlling of claim 1 is a means-plus-function limitation, but we do not need to construe the claim further to decide whether to grant institution of review. We encourage the parties to address this issue in future briefing.

3. *Independent Claim 29—“a communicating mechanism”*

Claim 29 recites “a communicating mechanism, communicating with the user interface device, the communicating mechanism receiving a packetized second signal from a remote source over a network, the packetized second signal including one or more packetized control signals.” Ex. 1001, 51:36–40. Claim 29 has been disclaimed, but the construction of this limitation still is at issue in relation to Petitioner’s challenges to several of claim 29’s dependent claims.

The Petition assumes this limitation is a means-plus-function limitation—without taking a position on that issue¹⁴—and provides a corresponding construction. *See* Pet. 6–9. The Petition’s construction is the

¹⁴ The Petition states: “To the extent that ‘communicating mechanism’ triggers a rebuttable presumption that it is to be interpreted as a means-plus-function limitation” Pet. 8. This reverses the applicable presumption. Because this limitation of claim 29 does *not* use the term “means,” we rebuttably presume § 112 ¶ 6 does *not* apply. *See Williamson*, 792 F.3d at 1347–49.

same as for the “communicating means” of claim 1, which is discussed above in Section V.C.2(b). *See id.* at 8–9.

The Preliminary Response does not provide a claim construction position, but notes the parties have disputed construction of certain claim terms in the District Court Litigation. *See* Prelim. Resp. 40–41.

Construction of the communicating mechanism limitation of claim 29 is not at issue in the District Court Litigation. *See* Ex. 3001.

Upon review of the foregoing, we conclude we need not construe the “communicating mechanism” limitation of claim 29. If Petitioner is correct that this limitation is a means-plus-function limitation, then what we have said above concerning the “communicating means” of claim 1 would directly apply here to claim 29 too. If Petitioner is not correct, then we must apply the plain and ordinary meaning of the language of claim 29 when we turn to Studor and Clem below. Based on our discussion of the functional aspects of Studor and Clem in relation to the “communicating means” of claim 1 (*see infra* Sections V.D.2 and V.E.2), this would not change the result of our present decision to institute review.

4. *Dependent Claim 21—“means for reproducing the second signal”*

Claim 21 recites: “An exercise device as recited in claim 1, further comprising means for reproducing the second signal.” Ex. 1001, 50:62–63.

The Petition assumes this limitation is a means-plus-function limitation—without taking a position on that issue—and provides a corresponding construction. *See* Pet. 6, 10. The Petition identifies the claimed function as “reproducing the second signal.” *Id.* at 10. The Petition identifies the corresponding structure as “output devices” such as audio or

video output devices. *Id.* (citing Ex. 1001, claims 21–23, 12:62–13:1, 13:11–44, 31:27–31); Ex. 1003 ¶ 61.

The Preliminary Response does not provide a claim construction position, but notes the parties have disputed construction of certain claim terms in the District Court Litigation. *See* Prelim. Resp. 40–41.

Upon review of the foregoing, we first conclude the “means for reproducing” limitation is a means-plus-function limitation under § 112 ¶ 6. Use of the word “means” creates a rebuttable presumption that § 112 ¶ 6 applies. *Williamson*, 792 F.3d at 1347–49. Further, the words of the claim are not understood by persons of ordinary skill in the art to have a sufficiently definite meaning as the name for structure. And, the parties have agreed in the District Court Litigation that the “means for reproducing” limitation is a means-plus-function limitation under § 112 ¶ 6. *See* Ex. 3001, 5.

Applying § 112 ¶ 6, we agree with both parties that the claimed function is “reproducing the second signal.” *See* Pet. 10; Ex. 3001, 5; Ex. 1001, 50:62–63.

We must next identify the ’062 patent Specification’s disclosure of corresponding structure for the claimed function. The parties agree this corresponding structure is an output device such as an audio or video output device, and they cite several Specification passages in support. Ex. 3001, 5; Pet. 10 (Petitioner’s citations to the Specification); Ex. 2006, 11–12 (Patent Owner’s and Petitioner’s citations to the Specification). We are persuaded by the parties’ mutual position in this regard. *See, e.g.*, Ex. 1001, claims 21–23, 2:62–3:5, 3:47–49, 12:57–13:4, 13:31–41, 16:61–63, 18:1–14, 23:58–24:9, 26:12–53, 27:14–26.

In summary, we conclude the means for reproducing of claim 21 is a means-plus-function limitation, which covers audio output devices, video output devices, and equivalents thereof under § 112 ¶ 6.

5. *Other Claim Limitations*

Upon review of the arguments and evidence presented at this stage of the proceeding, we determine no further explicit construction of any claim term is needed at the present time. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (per curiam) (claim terms need to be construed “only to the extent necessary to resolve the controversy” (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))).

D. *Obviousness over Studor and the Knowledge of a Person of Ordinary Skill in the Art*

Petitioner argues claims 1, 3–5, 8–11, 15, 16, 21–23, 26–28, 30, 36, 38, 40, 45, 46, and 48 of the ’062 patent would have been obvious over Studor and the knowledge of a person of ordinary skill in the art. *See* Pet. 2, 11–12, 15–41; Ex. 1003 ¶¶ 62–228; Ex. 1025 ¶¶ 48–112. Patent Owner opposes. *See* Prelim. Resp. 33–40, 45–49.

We have reviewed the preliminary record, and we conclude Petitioner has demonstrated a reasonable likelihood of prevailing on its assertions as to at least claim 1. We begin our analysis with a brief summary of Studor, then we address Petitioner’s contentions and Patent Owner’s opposition.

I. *Studor Disclosure*

Studor discloses an interactive exercise system with a controller that dynamically varies the resistance setting of exercise equipment using speed

and terrain information to simulate varying degrees of difficulty as a playback device concurrently plays pre-recorded audio and video. Ex. 1005, code (57). Figure 1, reproduced below, is an illustration of an interactive exercise system.

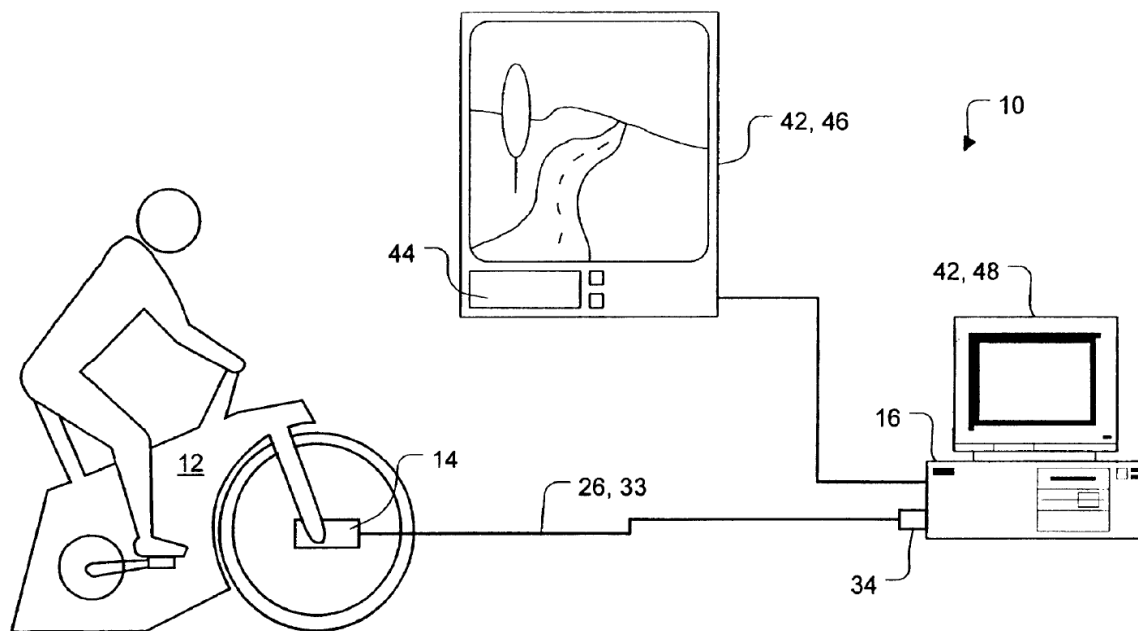


FIG. 1

Figure 1 depicts exercise system 10 including exercise equipment 12 with M-S converter 14, which gathers data and controls some equipment operation aspects, and computer system 16 that runs operational software and presents a real-world exercise experience simulation. *Id.* at 4:29–37. Exercise equipment 12 includes adjustable resistance system 22 and speed sensor 24, as illustrated in Figure 2, and allows a user to interact directly with a simulated environment. *Id.* at 4:38–47. The user may set a desired nominal difficulty level for exercise (e.g., easy, realistic, hard) by adjusting resistance system 22. *Id.* at 4:47–51, 12:30–36.

2. *Independent Claim 1*

Petitioner provides arguments and evidence in support of contending claim 1 is unpatentable as having been obvious over Studor and the knowledge of a person of ordinary skill in the art. *See* Pet. 11–12, 15–25; Ex. 1003 ¶¶ 42–44, 63–106. Patent Owner opposes. *See* Prelim. Resp. 33–40, 45–49.

As an overarching argument, Patent Owner objects to the Petition’s use of abbreviations 1[a], 1[b], 1[c], and 1[d] to refer to limitations (a), (b), (c), and (d) in claim 1. *See* Prelim. Resp. 38–40. Patent Owner argues these abbreviations, and several related cross-references in the Petition, are fatally unclear. *See id.* We do not agree, based on the present record. We have reviewed the entire Petition, and we conclude its cross-references are sufficiently clear to notify Patent Owner and the Board as to the positions taken by Petitioner, at least at the level of generality discussed in the Preliminary Response. We invite Patent Owner to identify, in the Patent Owner Response, *why* any *specific* cross-reference has caused Patent Owner to be confused as to a position taken by Petitioner.

We next address Petitioner’s contentions and Patent Owner’s opposition, on a limitation-by-limitation basis.

“1. An exercise device configured to enable the interaction of a user, the exercise device comprising:”

Petitioner asserts Studor’s exercise system 10 is an exercise device configured to enable the interaction of a user. *See* Pet. 15–16 (citing Ex. 1005, Fig. 1, 4:38–40, 4:43–48); Ex. 1003 ¶¶ 69–72. Patent Owner does not presently dispute this contention, and it is sufficiently supported by the cited evidence to justify institution of review. *See* Ex. 1005, Fig. 1, 4:38–40

(“The exercise equipment 12 allows the user to interact directly during exercise with the simulated environment created by the other components of the exercise system 10.”); *id.* at 4:45–51 (“The user may set a nominal difficulty level for exercise by adjusting the resistance system 22 . . .”).

“(a) an exercise mechanism comprising a movable element for movement in performance of exercise by a user, the exercise mechanism having one or more operating parameters;”

Petitioner asserts Studor’s exercise device 10 includes an exercise mechanism (i.e., exercise equipment 12) comprising a movable element for movement in performance of exercise by a user, and having one or more operating parameters. *See* Pet. 16–18 (citing Ex. 1005, Fig. 1, 4:28–64); Ex. 1003 ¶¶ 73–76. Patent Owner does not presently dispute this contention, and it is sufficiently supported by the cited evidence to justify institution of review. As a first example, Studor’s exercise equipment 12 may be a treadmill with a movable tread, having an adjustable resistance parameter. *See* Ex. 1005, 4:42–5:14. As a second example, Studor’s exercise equipment 12 may be a stationary bicycle with movable pedals, having an adjustable resistance parameter. *See id.* at Fig. 1, 4:42–43.

“(b) interface means, communicating with the exercise mechanism, for gathering a first signal from the user;”

Interface Means as User Interface of Computer System 16

Petitioner firstly asserts that the interface means of claim 1 can be found in Studor’s exercise device 10 as a user interface of computer system 16. *See* Pet. 18–21. According to Petitioner, Studor discloses that this user interface communicates with exercise equipment 12, for gathering a first signal from the user to control operating parameters of equipment 12

and set up exercise sessions. *See id.* (citing Ex. 1005, Figs. 1–2, 5:15–32, 6:3–15, 6:25–30, 6:42–44, 9:54–10:32, 11:5–15, 12:23–44); Ex. 1003 ¶¶ 77–78, 80–87.

Patent Owner argues Petitioner’s reliance on the user interface of computer system 16 as the interface means of claim 1 is misplaced. *See* Prelim. Resp. 45–46. Patent Owner points out that claim 1 recites an “*exercise device . . . comprising . . . interface means*” (Ex. 1001, 49:49–57 (emphases added)), and then asserts Studor’s computer system 16 by contrast is “separate from, and [is] not included as part of, the exercise equipment 12.” Prelim. Resp. 45–46 (citing Ex. 1005, Fig. 1, 5:4–9). Patent Owner asserts Petitioner “does not explain how the computer system 16 . . . is part of an ‘exercise device,’” and instead Petitioner and Dr. Houh “do not even recognize this deficiency [of Studor], much less attempt to address it.” *Id.* at 46.

Based on the present record, we do not agree with Patent Owner’s opposition, because it misconstrues the Petition. The Petition asserts the “exercise device” of claim 1 corresponds to the entirety of Studor’s exercise system 10, illustrated in Figure 1 of Studor. *See, e.g.*, Pet. 15 (“Studor teaches an exercise system 10 (‘*exercise device*’).”); *id.* at 17 (annotating Studor’s Figure 1 to identify the “exercise device” and “exercise mechanism” of claim 1). Studor’s exercise system 10 includes exercise equipment 12 and computer system 16. *See* Ex. 1005, Fig. 1, 4:28–37, 6:3–15. Thus, as recited in claim 1, Studor’s exercise device (i.e., exercise system 10) comprises an interface means (i.e., the user interface of computer system 16). The exercise device and the interface means are not separate from each other.

We further determine, based on the present record, that Petitioner's reliance on the user interface of computer system 16 as the interface means of claim 1 is sufficiently supported by the cited evidence to justify institution of review. In particular, we have construed the interface means to cover at least a keyboard or a mouse, and equivalents thereof under § 112 ¶ 6. *See supra* Section V.C.2(a). The user interface of computer system 16 may be a keyboard and a mouse. *See* Ex. 1005, Fig. 1 (illustrating computer system 16), 6:3–44 (describing how computer system 16 may be a suitably featured personal computer including a conventional graphical user interface and typical operating systems such as Windows systems).

Studor's interface means must further perform the function(s) recited in claim 1. As discussed above (*see supra* Section V.C.2(a)), the parties disagree concerning what these function(s) might be. However, at the most limiting, the claimed function(s) include communicating with the exercise mechanism, and gathering a first signal from the user. *See id.* In these regards, according to Studor, the user of exercise system 10 uses the user interface of computer system 16 to select exercise equipment 12 from a list of compatible types; to specify a desired nominal level of exercise difficulty (e.g., easy, realistic, hard); to specify the type of desired audio output (e.g., volume, music or nature sounds, etc.); and to specify feedback information to see while exercising (e.g., pulse, speed, distance, calories, etc.). *See* Ex. 1005, Figs. 1–2, 5:15–32, 11:5–6, 12:23–40. The user of exercise system 10 also uses the user interface of computer system 16 “to control the audio-visual environments assembled and played on” video monitor 42 and speaker 44 during exercise sessions. *See id.* at Fig. 1, 6:3–15, 6:42–44, 7:8–11, 9:54–65, 11:5–16. Thus, even if we were to adopt a limited

construction of the claimed function(s), Studor still appears to disclose the interface means, based on the present record.

Interface Means as Keypad of Exercise Equipment 12

Petitioner secondly and alternatively asserts that the interface means of claim 1 can be found in Studor as a device “integrated” with exercise equipment 12, for example a keypad as shown in Figure 2. *See* Pet. 18–21. According to Petitioner, Studor discloses that this user interface communicates with exercise equipment 12, for gathering a first signal from the user to control operating parameters of equipment 12 and set up exercise sessions. *See id.* (citing Ex. 1005, Figs. 1–2, 5:15–32, 6:3–15, 6:25–30, 6:42–44, 9:54–10:32, 11:5–15, 12:23–44); Ex. 1003 ¶¶ 77–78, 80–87.

Patent Owner argues Petitioner errs in relying on the keypad of Studor’s exercise equipment 12 as satisfying the claimed interface means. Prelim. Resp. 46–47. Patent Owner asserts claim 1 recites an “interface means . . . for *gathering a first signal from the user*” (Ex. 1001, 49:56–57 (emphases added)), for which “the Petition exclusively looks to” computer system 16 and software 18 of Studor. Prelim. Resp. 46–47 (citing Pet. 20–21).

Based on the present record, we do not agree with Patent Owner’s opposition, because it misconstrues the Petition. The Petition states “Studor discloses” the interface means of claim 1 because “Studor teaches that its exercise system includes a computer system 16 that has a user interface, *and optionally, user input devices integrated in exercise equipment 12* such as a keypad and display unit 72 (*‘user interface device’*).” Pet. 18 (some emphasis added). This clearly articulates reliance on the keypad of Figure 2,

as an optional alternative to the user interface of computer system 16, as corresponding to the interface means of claim 1. This comports with how a person of ordinary skill in the art would understand the “Keypad” shown in Figure 2 to be used: as one way for exercise system 10 to gather a signal from the user of exercise equipment 12.

We further determine, based on the present record, that Petitioner’s reliance on the keypad in Studor’s Figure 2 as the interface means of claim 1 is sufficiently supported by the cited evidence to justify institution of review. In particular, we have construed the interface means to cover at least a keyboard, and equivalents thereof under § 112 ¶ 6. *See supra* Section V.C.2(a). A keypad is such a structure.

Studor’s interface means must further perform the function(s) recited in claim 1. As discussed above (*see supra* Section V.C.2(a)), the parties disagree concerning what these function(s) might be. However, at the most limiting, the claimed function(s) include communicating with the exercise mechanism, and gathering a first signal from the user. *See id.* In these regards, Figure 2 of Studor illustrates that the keypad communicates with the microcontroller “U-ctrl” of exercise equipment 12. *See also* Ex. 1005, 4:65–5:32 (describing Fig. 2). The written description of Studor does not appear, based on the present record, to specify what kind of information is entered by the user via the keypad of exercise equipment 12. *See, e.g., id.* at 12:23–40 (discussing display unit 72 shown in Figure 2, but not the “Keypad” shown in Figure 2). Nonetheless, a person of ordinary skill in the art would understand that this keypad is present in Figure 2 to be used as one way that exercise system 10 might gather a signal from the user of exercise equipment 12, which is all that claim 1 requires. *See* Ex. 1003 ¶¶ 77–78,

80–82. For example, claim 1 does not specify a particular kind of “signal” that must be gathered from the user, or specify any interaction(s) between the signal and other claim limitations. Thus, even if we were to adopt a limited construction of the claimed function(s), Studor still appears to disclose the interface means, based on the present record.

Interface Means as Internet Implementation

In what appears to be a third alternative basis for addressing the interface means of claim 1, the Petition states: “In some implementations” of Studor, “users located on different continents may employ exercise system 10 with Internet connected network computers (NC) and media 20 on a server computer.” Pet. 19 (quoting Ex. 1005, 8:31–35); Ex. 1003 ¶ 79. Further: “In such implementations, a [person of ordinary skill in the art] would understand a local network computer would include the user interface to enable it to gather user input for exercise equipment 12.” Pet. 19 (quoting Ex. 1005, 8:31–35); Ex. 1003 ¶ 79.

We do not rely on this discussion in the Petition as a basis for granting institution of review. It does not explain persuasively, with sufficient detail, how Studor’s disclosure of networked computing systems corresponds to the interface means of claim 1.

“(c) communicating means, communicating with the interface means, for receiving a packetized second signal from a remote source over a network, the packetized second signal including one or more packetized control signals; and”

Petitioner asserts “Studor renders obvious” the communicating means of claim 1. Pet. 21. In particular, Petitioner contends Studor’s computer system 16 has communicating means communicating with the interface

means, and receiving a second signal (i.e., media 20) from a remote source over a network (i.e., the Internet). *See id.* at 21–22 (citing Ex. 1005, 5:21–24, 8:23–38, 16:53–62); Ex. 1003 ¶¶ 88–89.

Patent Owner objects that “the Petition does not demonstrate what Petitioner regards in Studor as disclosing the claimed ‘remote source,’” because “the Petition includes no mention of a ‘remote source’ in Ground 1 at all (except in the heading for this limitation).” Prelim. Resp. 47. Patent Owner appears to be correct that the Petition’s analysis of the communicating means limitation does not refer to the claim term “remote source.” *See* Pet. 21–24.

Nonetheless, the Petition does state Studor’s exercise system 10 “can receive media 20 over a network like the Internet.” *Id.* at 21 (citing Ex. 1005, 8:23–37, 16:53–62). The cited disclosure in Studor provides, in part, that “not all components of the computer system 16 need to be physically present in one ‘box,’ or even at one location,” and “users located on different continents may employ the exercise system 10 with Internet connected network computers (NC) and media 20 *on a server computer*, perhaps actually located on yet another continent, to hold ‘communal’ exercise sessions” Ex. 1005, 8:26–38 (emphasis added). It is clear, when reading the Petition in this context, that Petitioner contends the remote source of claim 1 corresponds to the Internet-connected server computer disclosed by Studor.

Petitioner next asserts that Studor’s media 20 includes control signals, as claimed, because it contains course profiles and terrain characteristic data to allow users at different locations to participate in the same exercise

course. *See* Pet. 22–23 (citing Ex. 1005, Figs. 5 and 7–8, 4:6–10, 11:11–12, 11:38–42, 12:48–50, 13:18–35); Ex. 1003 ¶¶ 90–92.

Patent Owner objects that Studor’s terrain data does not disclose *control* signals, as recited in claim 1. *See* Prelim. Resp. 47–49. Patent Owner here relies heavily on a Declaration of Dr. William C. Easttom, Ph.D., D.Sc., submitted as Exhibit 2015 in IPR2021-00342 (“the Easttom Declaration” or “Easttom Decl.”). *See, e.g.*, Prelim. Resp. 48 (citing Easttom Decl. pgs. 43–50). Dr. Easttom testifies that “terrain data cannot control operation of the exercise device *of itself* and so cannot be a control signal.” *Id.* at 48 (emphasis added) (citing Easttom Decl. pg. 43; Ex. 1005, 13:18–21). In particular, according to Dr. Easttom, Studor’s M-S converter 14 generates a control signal based on the *combination* of speed data received from speed sensor 24 *and* the terrain data. *Id.* at 49 (quoting a passage from Easttom Decl. pgs. 45–46). Patent Owner additionally asserts Petitioner’s arguments equating Studor’s terrain data to the claimed control signal are conclusory and lack persuasive explanation, despite the Easttom Declaration having been served on Petitioner on September 20, 2021, prior to the present Petition being filed on October 13, 2021. *See id.* at 48, 49 (citing Pet. 22–23).

We do not agree with Patent Owner’s objections, on the present record, for at least two reasons. First, the Easttom Declaration has not been submitted as evidence as an Exhibit in this proceeding. Second and just as important, the Preliminary Response cites to at least eight pages of testimony from the Easttom Declaration, and provides only a short summary of this testimony. *See* Prelim. Resp. 47–49 (discussing Easttom Decl. pgs. 43–50). This violates our rule against incorporation of arguments by

reference. *See* 37 C.F.R. § 42.6(a)(3) (“Arguments must not be incorporated by reference from one document into another document.”). For these two reasons, for purposes of the present decision, we will limit our consideration of the Easttom Declaration to the statements that are reproduced in the Preliminary Response, and accord those statements only the weight that is due to attorney argument and not expert witness testimony.

In light of that limited consideration of the Easttom Declaration in this decision, the present record is essentially the same as the record stood in IPR2021-00342 at the institution stage, where the Board instituted review over Patent Owner’s similar objections. *See, e.g.*, Ex. 1002, 030–031. In particular, as in the prior proceeding, Petitioner here argues that the terrain characteristic data included in Studor’s media 20 corresponds to the claimed control signal because it determines the resistance level of resistance system 22 in exercise equipment 12. *See* Pet. 22–23 (citing Ex. 1005, Figs. 5 and 7–8, 4:6–10, 11:11–12, 11:38–42, 12:48–50, 13:18–35); Ex. 1002, 030. We do not agree with Patent Owner’s position that Petitioner’s arguments in this regard are too conclusory to justify institution.

Patent Owner also argues, as in IPR2021-00342, that Studor’s terrain characteristic data is not a control signal, because it is instead raw data that is used in a local calculation by computer system 16 and/or M-S converter 14 to generate a resistance level that can be used to control exercise equipment 12. *See* Prelim. Resp. 47–49; Ex. 1002, 030–031.

As in IPR2021-00342, we conclude here that “at this preliminary stage, Patent Owner’s argument may have merit, but on the current record, it is unclear why Studor’s terrain characteristic data does not qualify as a control signal.” Ex. 1002, 031. In particular: “Studor explains that its

terrain characteristic data is used to set the resistance level for the exercise machine.” *Id.* (citing Ex. 1005, 9:54–56, 12:48–50, 4:6–10, Fig. 5).

“Although Patent Owner attempts to draw a sharp distinction between raw data and the claimed ‘control signal,’ *the ’062 patent contemplates that a control signal can be subjected to further processing.*” *Id.* (emphasis added). “As one example, the ‘scaling control’ of claim 47 allows a user to change the control signal.” *Id.* (citing Ex. 1001, 52:45–50). For these reasons, we conclude here as in IPR2021-00342 that “it is unclear why a ‘control signal’ as that term is used in the ’062 patent excludes data, such as Studor’s terrain characteristic data, that is used to determine resistance but may be impacted by further processing before the ultimate resistance is determined.” *Id.* The discussion in the Preliminary Response summarizing the Easttom Declaration does not meaningfully address the foregoing claim construction considerations for the term “control signal” in light of the ’062 patent Specification.

Petitioner next asserts a person of ordinary skill in the art would have understood, based on Studor’s express disclosure that computer system 16 receives control signals (i.e., media 20) via the Internet, that “computer system 16 would be receiving ‘*packetized*’ control signals from the media 20 located on the server.” Pet. 23–24 (citing Ex. 1005, 8:29–37; Ex. 1001, 16:42–47); Ex. 1003 ¶¶ 42–44, 93–95. Patent Owner does not presently dispute this contention, and it is sufficiently supported by the cited evidence to justify institution of review. *See* Ex. 1005, 8:29–37; Ex. 1003 ¶¶ 42–44, 93–95.

Petitioner next, in the event the communicating means of claim 1 “excludes pre-downloaded control signals” (Ex. 1003 ¶ 96), asserts Studor

teaches “users located on different continents may . . . hold ‘communal’ exercise sessions in concert, for competitive sporting events, or for coached exercise regimes.” Pet. 24 (quoting Ex. 1005, 8:31–38). Petitioner then argues: “To hold a live exercise session in concert, a [person of ordinary skill in the art] would have found it obvious to use some mechanism, such as a synchronization control signal, to synchronize the exercise devices in different continents.” *Id.* In support, Petitioner cites Bobick¹⁵ as “describing using signals for ‘synchronizing each of the exercise apparatus in a network.’” *Id.* (citing Ex. 1008, Fig. 23, 25:60–26:32); Ex. 1003 ¶¶ 96–97.

Patent Owner objects that the Petition’s foregoing reliance on Bobick fails to comply with 35 U.S.C. § 311 and § 312. *See* Prelim. Resp. 33–38. The former statute pertinently “limits review to only those grounds on which Petitioner has requested review.” *Id.* at 35 (citing *SAS*, 138 S. Ct. at 1355). The latter statute pertinently provides that an IPR petition “may be considered only if . . . the petition identifies, in writing and *with particularity* . . . *the grounds* on which the challenge to each claim is based, *and the evidence* that supports the grounds for the challenge to each claim” 35 U.S.C. § 312(a)(3) (emphases added).

Patent Owner asserts the Petition’s first ground identifies only Studor as the prior art at issue, and then “relies improperly on” Bobick. Prelim. Resp. 33–34, 36 (citing Pet. 24). In Patent Owner’s view, this “effectively multiplies the actual number of grounds asserted,” without the requisite specificity, meriting denial of institution. *Id.* at 33–34, 38 (citing *Adaptics*

¹⁵ Ex. 1008 (US 5,758,630 to Bobick et al., issued July 28, 1998).

Ltd. v. Perfect Co., IPR2018-01596, Paper 20 at 21–23 (PTAB Mar. 6, 2019); 37 C.F.R. § 42.22(a)(2)). Patent Owner also asserts the Petition is fatally defective for failing to “address[] why a [person of ordinary skill in the art] would combine” Bobick with Studor to reach the invention of claim 1. *Id.* at 33, 36.

We do not agree, on the present record, that Petitioner’s reliance on Bobick is improper. First, Petitioner’s reliance on Bobick is limited to the circumstance that claim 1 is construed to “exclude[] pre-downloaded control signals.” Ex. 1003 ¶ 96; Pet. 24. Patent Owner has not urged us to apply this claim construction at this stage of the proceeding, so Bobick is not necessary to justify institution of review.

Second, even if we were to construe claim 1 to exclude pre-downloaded control signals and thereby bring Petitioner’s reliance on Bobick into consideration, the Petition explains Bobick is cited for disclosing “using signals for ‘synchronizing each of the exercise apparatus in a network.’” Pet. 24 (citing Ex. 1008, Fig. 23, 25:60–26:32). The Petition also explains it would have been obvious, based on this disclosure in Bobick, to implement the communal exercise sessions disclosed in Studor by using synchronized control signals as disclosed in Bobick. *See id.* Thus, even though the Petition does not identify Bobick as a prior art reference applied with Studor in the first ground (*see id.* at 2, 15), the Petition’s analysis clearly articulates Petitioner’s reliance on Bobick in the challenge to claim 1 (*see id.* at 24). This satisfies the particularity requirements of 35 U.S.C. § 312(a)(3) and 37 C.F.R. § 42.22(a)(2). In this circumstance, we will not exalt form over substance to deny a sufficiently articulated petition

simply because the titular identification of the ground does not say “Bobick.”

Patent Owner’s reliance on the Board’s decision in *Adaptics, supra*, does not persuade us otherwise. In that case, the Board considered a petition that “suffer[ed] from a lack of particularly that results in voluminous and excessive grounds” including “a large number of secondary references connected by ‘and/or’ [that resulted] in a multiplicity of grounds.” *Adaptics*, at 21. In particular, even construing the petition in the petitioner’s favor, it “encompasse[d] nine combinations with Bendel and another eight distinct combinations with Sartorius, for a total of seventeen possible combinations,” and its further “use of ‘and/or’ . . . expand[ed] the ground to include combinations of three, four, or more references, yielding hundreds of possible combinations.” *Id.* at 18–19. That is not the case here, where only two references (Studor and Bobick) are in play.

Patent Owner finally objects that “Studor states that the computer system 16 uses the media 20 to operate the exercise system 10.” Prelim. Resp. 47 (citing Ex. 1005, 4:28–37). It is not clear to us how this assertion, even if it accurately characterizes Studor’s disclosure, articulates a basis for denying institution based on Petitioner’s contentions regarding the communicating means of claim 1. We, therefore, do not agree with Patent Owner’s objection.

We further determine, based on the present record, that Petitioner’s reliance on Studor as disclosing the communicating means of claim 1 is sufficiently supported by the cited evidence to justify institution of review. *See* Pet. 21–24; Ex. 1003 ¶¶ 88–98. Here, the parties have disagreed whether the corresponding structure is a network interface or a modem

(Petitioner’s position) or a computer (Patent Owner’s position). *See supra* Section V.C.2(b). Either way, based on the present record, it appears that Studor’s computer system 16 has the same structure, or an equivalent thereof under § 112 ¶ 6. *See* Ex. 1005, Fig. 1, 6:46–47 (computer system 16 may implement “internet / modem racing”), 8:23–48, 8:61–64, 15:47–53.

Studor’s communicating means must further perform the function(s) recited in claim 1. As discussed above (*see supra* Section V.C.2(b)), the parties disagree concerning what these function(s) might be. However, at the most limiting, the claimed function(s) include communicating with the interface means, and receiving a packetized control signal from a remote source over a network. *See id.* In these regards, based on the present record, it appears that Studor’s computer system 16 communicates with the interface means—regardless of whether the interface means is found as the keyboard and mouse of system 16, or the keypad of exercise equipment 12 which communicates with system 16 via communications link 26. *See* Ex. 1005, Figs. 1–2, 4:28–37, 5:15–39, 12:23–40. It also appears that Studor’s computer system 16 further receives a control signal from a remote source over a network, as already discussed above. Thus, even if we were to adopt a limited construction of the claimed function(s), Studor still appears to disclose the communicating means, based on the present record.

“(d) means, responsive to the packetized second signal, for controlling the operating parameters of the exercise mechanism.”

Petitioner asserts “Studor renders obvious” the means for controlling of claim 1. Pet. 24. In particular, according to Petitioner, Studor’s exercise system 10 has means (i.e., micro-controller 28 of M-S converter 14), responsive to media 20, for controlling the operating parameters of exercise

equipment 12. *See id.* at 24–25 (citing Ex. 1005, Fig. 2, 5:18–25, 11:22–26, 13:18–21); Ex. 1003 ¶¶ 99–105. In particular, according to Petitioner, Studor’s M-S converter 14 “responds to the terrain data and synchronization information” provided by media 20 “by controlling resistance of exercise equipment 12” via resistance system 22. Pet. 24–25; Ex. 1003 ¶¶ 99–105. Patent Owner does not presently dispute these contentions, and they are sufficiently supported by the cited evidence to justify institution of review. *See* Ex. 1005, Fig. 2, 5:15–25, 13:7–25; Ex. 1003 ¶¶ 99–105.

The parties have disagreed whether the corresponding structure of the means for controlling is a controller such as a general-purpose computer or processor (Petitioner’s position) or a controller such as a motor, solenoid, or other electrically-driven actuator (Patent Owner’s position). *See supra* Section V.C.2(c). Either way, based on the present record, it appears that Studor’s M-S converter 14 and exercise equipment 12 have the same structure, or an equivalent thereof under § 112 ¶ 6. *See* Ex. 1005, Fig. 2, 4:58–64, 5:15–25, 13:7–25. In particular, M-S converter 14 includes microcontroller 28 which controls an electrically driven actuator in resistance system 22 of exercise equipment 12. *See id.*

Studor’s means for controlling must further perform the function(s) recited in claim 1. As discussed above (*see supra* Section V.C.2(c)), the parties disagree concerning what these function(s) might be. However, at the most limiting, the claimed function(s) include responding to the packetized control signal, and controlling the operating parameters of the exercise mechanism. *See id.* In these regards, based on the present record, it appears that Studor’s M-S converter 14 performs both of these functions. *See* Ex. 1005, Figs. 1–2, 4:58–64, 5:15–25, 13:7–25. In particular, M-S

converter 14 receives control signals from computer system 16 via communications link 26, and then controls the resistance setting of resistance system 22 in exercise equipment 12 accordingly. *See id.* Thus, even if we were to adopt a limited construction of the claimed function(s), Studor still appears to disclose the means for controlling, based on the present record.

Conclusion as to Claim 1

For the foregoing reasons, and based on the present record, we conclude Petitioner has provided sufficient argument and evidence in relation to the proposed obviousness of claim 1 over Studor and the knowledge of a person of ordinary skill in the art, to demonstrate a reasonable likelihood that Petitioner would prevail with respect to this challenge at trial.

3. Independent Claim 29

Independent claim 29 has been disclaimed by Patent Owner, but it is still at issue here because Petitioner challenges several of its dependent claims. Petitioner's and Patent Owner's arguments concerning claim 29 have all been addressed above in the context of claim 1. *See* Pet. 11–12, 15–25; Prelim. Resp. 33–40, 45–49. For the reasons provided above, based on the present record, we conclude Petitioner has provided sufficient argument and evidence in relation to the proposed obviousness of claim 29's subject matter over Studor and the knowledge of a person of ordinary skill in the art, to demonstrate a reasonable likelihood that Petitioner would prevail with respect to challenging the dependent claims at trial.

4. *Dependent Claims 3–5, 8–11, 15, 16, 21–23, 26–28, 30, 36, 38, 40, 45, 46, and 48*

Pursuant to USPTO policy implementing *SAS*, we must “either (1) institute as to all claims challenged in the petition and on all grounds in the petition, or (2) institute on no claims and deny institution.” CTPG 5–6, 64. We “will not institute on fewer than all claims or all challenges in a petition.” *Id.* at 5, 64; *see also PGS Geophysical AS v. Iancu*, 891 F.3d 1354, 1359–60 (Fed. Cir. 2018) (stating a decision to institute is “a simple yes-or-no institution choice respecting a petition, embracing all challenges included in the petition”). Thus, because we have decided to grant institution on Petitioner’s first ground against the patentability of claim 1, we must do the same for the other claims.

Nonetheless, we acknowledge Patent Owner’s argument that the Petition fails to comply with 35 U.S.C. § 311 and § 312 in relation to dependent claims 10, 45, and 46. *See* Prelim. Resp. 33–40. Patent Owner asserts the Petition’s first ground identifies only Studor as the prior art at issue, and then the Petition “relies improperly on” various additional prior art references when addressing these dependent claims. *Id.* at 33–34, 37 (citing Pet. 29–30 (claim 10), 39 (claim 45), 40–41 (claim 46)). In Patent Owner’s view, this “effectively multiplies the actual number of grounds asserted,” without the requisite specificity, meriting denial of institution. *Id.* at 33–34, 38 (citing *Adaptics*, at 21–23; 37 C.F.R. § 42.22(a)(2)). Patent Owner also asserts the Petition is fatally defective for failing to explain how these other prior art references would have been combined with Studor. *Id.* at 37–38. For the following reasons, we do not agree, on the present record,

that Petitioner’s reliance on additional prior art references in connection with dependent claims 10, 45, and 46 is improper or insufficiently articulated.

a) Claim 10

Claim 10 recites: “An exercise device as recited in claim 1, wherein the interface means comprises a video camera integrally formed with the exercise device.” Ex. 1001, 50:24–26. Petitioner correspondingly contends Studor discloses display unit 72 integrally formed with exercise equipment 12, as well as incorporating video conferencing capability into exercise system 10, but Studor does *not* disclose a video camera integrally formed with exercise equipment. *See* Pet. 29 (citing Ex. 1005, Fig. 2, 12:36–39, 15:47–53); Ex. 1003 ¶¶ 140–141. The Petition then cites Cipolla¹⁶ as disclosing “[i]ntegrating a video camera into a video display, particularly for video conferencing.” Pet. 29–30 (citing Ex. 1018, Fig. 2, 1:6–10, 1:47–48, 3:29–31); Ex. 1003 ¶ 143. Petitioner concludes it would have been obvious to integrate a video camera with Studor’s exercise equipment 12, in light of Cipolla, to “allow ‘wide camera range and user eye contact’” during videoconferencing. Pet. 29–30; Ex. 1003 ¶¶ 143–144.

Based on the foregoing, we conclude that even though the Petition does not identify Cipolla as a prior art reference applied with Studor in the first ground (*see* Pet. 2, 15), the Petition’s analysis clearly articulates Petitioner’s reliance on Cipolla in the challenge to claim 10 (*see id.* at 29–30). This satisfies the particularity requirements of 35 U.S.C. § 312(a)(3) and 37 C.F.R. § 42.22(a)(2). In this circumstance, we will not exalt form over substance to deny a sufficiently articulated petition simply

¹⁶ Ex. 1018 (US 6,587,151 B1 to Cipolla et al., issued July 1, 2003).

because the titular identification of the ground does not say “Cipolla.” Patent Owner’s reliance on the Board’s decision in *Adaptics, supra*, does not persuade us otherwise, because in this case there are at most three references (Studor and perhaps Bobick for claim 1, and Studor and Cipolla for claim 10) in play.

b) Claims 45 and 46

Claim 45 recites: “An exercise device as recited in claim 29, wherein the exercise device further comprise[s] a diagnostic control, said diagnostic control activating a connection with a communication system to check the status of the exercise device.” Ex. 1001, 52:37–40. Claim 46 recites: “An exercise device as recited in claim 45, wherein the diagnostic control activates a downloading process to retrieve one or more software updates from the communication system.” *Id.* at 52:41–44; *id.* at Cert. of Corr. pg. 5.

Petitioner correspondingly contends Studor’s exercise system 10 includes a software-updating diagnostic control because it provides for “update detection . . . that activates a connection with a bulletin board, bulletin board system, or Internet site, or alternatively, with the server computer hosting media 20 . . . to check whether new versions or updates of software program 18 or the video drivers are available.” Pet. 38–39, 40 (citing Ex. 1005, 9:36–38, 9:45–51, 8:15–22); Ex. 1003 ¶¶ 212–214, 222–223. The Petition then cites Fawcett¹⁷ and Cheng¹⁸ as establishing that “a diagnostic control that activates a connection with a communication system to check the status of the exercise device was well-known by the

¹⁷ Ex. 1020 (US 5,845,077 to Fawcett, issued Dec. 1, 1998).

¹⁸ Ex. 1021 (US 6,151,643 to Cheng et al., issued Nov. 21, 2000).

relevant time period.” Pet. 39, 40 (citing Ex. 1020, code (57); Ex. 1021, 3:25–45); Ex. 1003 ¶¶ 218–219, 225–226. Petitioner concludes a person of ordinary skill in the art would have been motivated to include such a diagnostic control in Studor’s exercise system 10 to obtain “several advantages, including reducing user related installation problems, avoiding the need for storage media, and ensuring that if the software gets corrupted, the user can get a new up-to-date copy of the software.” Pet. 39, 41; Ex. 1003 ¶¶ 220–221, 227–228.

Based on the foregoing, we conclude that even though the Petition does not identify Fawcett and Cheng as prior art references applied with Studor in the first ground (*see* Pet. 2, 15), the Petition’s analysis clearly articulates Petitioner’s reliance on Fawcett and Cheng in the challenges to claims 45 and 46 (*see id.* at 38–41). This satisfies the particularity requirements of 35 U.S.C. § 312(a)(3) and 37 C.F.R. § 42.22(a)(2). In this circumstance, we will not exalt form over substance to deny a sufficiently articulated petition simply because the titular identification of the ground does not say “Fawcett” and “Cheng.” Patent Owner’s reliance on the Board’s decision in *Adaptics, supra*, does not persuade us otherwise, because in this case there are at most four references (Studor and perhaps Bobick for claim 1, and Studor, Fawcett, and Cheng for claims 45 and 46) in play.

Patent Owner additionally asserts the Petition errs in failing to address how or why a person of ordinary skill in the art would have understood that Fawcett’s update service or Cheng’s client application might correspond to claim 45’s diagnostic control. Prelim. Resp. 37–38. We disagree. It is readily apparent from claims 45 and 46 themselves that a software update

downloading process is one example of the diagnostic control activation recited in claim 45. In addition, the Fawcett and Cheng disclosures cited in the Petition pertain to software update downloading processes. *See* Ex. 1020, code (57) (“Creators of computer software provide the most up-to-date versions of their computer software on an update service” which “inventories the user computer to determine what computer software may be out-of-date, and/or need maintenance updates.”); Ex. 1021, 3:25–45 (“On each user computer . . . there is provided a client application that periodically connects over the network to the update database of the service provider computer system,” to “determine[] which software updates are applicable or relevant to the user’s computer.”).

c) Conclusion

For the foregoing reasons, we institute review as to whether dependent claims 3–5, 8–11, 15, 16, 21–23, 26–28, 30, 36, 38, 40, 45, 46, and 48 are unpatentable as having been obvious over Studor and the knowledge of a person of ordinary skill in the art.

E. Obviousness over Clem and the Knowledge of a Person of Ordinary Skill in the Art or Hickman

Petitioner argues claims 1, 3–5, 8–11, 15, 16, 21–23, 26–28, 30, 36, 38, 40, 45, 46, and 48 of the ’062 patent would have been obvious over Clem and the knowledge of a person of ordinary skill or Hickman. *See* Pet. 2, 12–15, 41–72; Ex. 1003 ¶¶ 358–563; Ex. 1025 ¶¶ 48–101, 113–133. Patent Owner opposes. *See* Prelim. Resp. 33–40, 50–53.

We have reviewed the preliminary record, and we conclude Petitioner has demonstrated a reasonable likelihood of prevailing on its assertions as to

at least claim 1. We begin our analysis with a brief summary of Clem, then we address Petitioner's contentions and Patent Owner's opposition.

1. Clem Disclosure

Clem discloses an interactive programmable fitness system including an exercise device at a user location that is controlled from a remote control location via a communication system. *See* Ex. 1012, codes (54) and (57). Figure 1 is a schematic representation of fitness system 10, including fitness device 32 at user location 34 being coupled to web site 12 via the Internet 19. *See id.* at Fig. 1, 2:24–25, 2:34–42. This coupling permits web site 12 to transmit information to device 32 to control aspects of the device, such as drive motor 16 and incline motor 36 of a treadmill. *See id.* at 2:42–52, 3:64–66. Also, a user of device 32 “can interact on-line with a live fitness expert located at the web site 12 to engage in a real time two way communication regarding matters related to fitness,” and device 32 can upload and download video and audio information. *Id.* at 2:53–65.

Figure 3, reproduced below, is a block diagram of a controller suitable for use in fitness device 32.

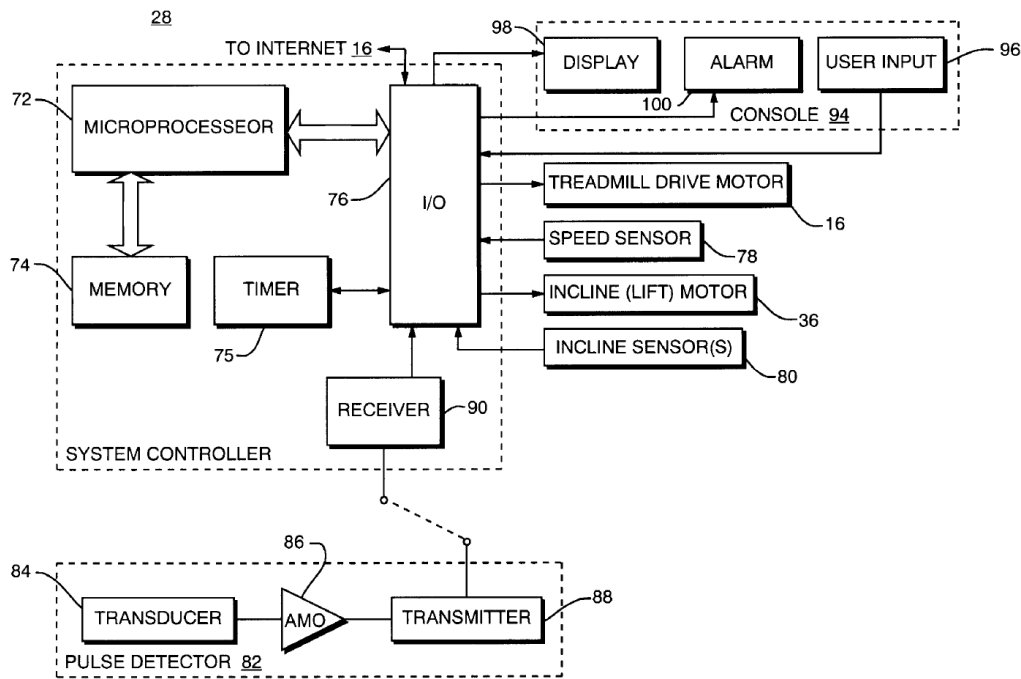


FIG. 3

Figure 3 illustrates controller 28 including microprocessor 72 and input/output circuitry 76, which is connected to console 94 of fitness device 32, such as a treadmill. *See id.* at 3:64–66 (Fig. 2A), 5:1–5, 5:16–18. Console 94 includes display 98, which is controlled by microprocessor 72. *See id.* at 5:16–18. Figure 3 indicates that console 94 also has user input 96, although this is not further discussed in the written description. *See id.* at Fig. 3. Microprocessor 72 further is connected to: drive motor 16 to control the speed of the treadmill; speed sensor 78 to monitor the speed of the treadmill; incline motor 36 to control the tilt of the treadmill; and incline sensor 80 to monitor the tilt of the treadmill. *See id.* at 5:8–15, 5:24–30. Microprocessor 72, moreover, is connected to the Internet 19¹⁹, and thereby to web site 12, to exchange information. *Id.* at Figs. 1 and 3, 5:18–23.

¹⁹ Clem’s Figure 3 uses “16” to identify both of the Internet and the drive motor. Clem’s written description instead refers to the Internet 19 and drive motor 16. *See, e.g.,* Ex. 1012, 2:42, 2:46, 5:22–23.

2. *Independent Claim 1*

Petitioner provides arguments and evidence in support of contending claim 1 is unpatentable as having been obvious over Clem and the knowledge of a person of ordinary skill. *See* Pet. 12–14, 41–51; Ex. 1003 ¶¶ 42–44, 358–366, 373–411. In particular, as already discussed above in Section III.C.3, Petitioner does not rely on Hickman in any respect when arguing for the unpatentability of claim 1. *See* Pet. 41–51; Ex. 1003 ¶¶ 373–411. Patent Owner opposes. *See* Prelim. Resp. 33–40, 50–53. We address the parties’ arguments on a limitation-by-limitation basis.

“1. An exercise device configured to enable the interaction of a user, the exercise device comprising:”

Petitioner asserts Clem’s fitness device 32 is an exercise device configured to enable the interaction of a user. *See* Pet. 42–43 (citing Ex. 1012, code (57), Figs. 2A and 3, 2:54–65, 3:46–49, 8:9–12 (claim 23)); Ex. 1003 ¶¶ 377–381. Patent Owner does not presently dispute this contention, and it is sufficiently supported by the cited evidence to justify institution of review. *See* Ex. 1012, Figs. 2A and 3, 2:54–65, 3:46–49, 3:64–66 (fitness device 32 can be a treadmill, and the user can use device 32 to interact on-line over the Internet with a live fitness expert, and to obtain information for device 32 via the Internet).

“(a) an exercise mechanism comprising a movable element for movement in performance of exercise by a user, the exercise mechanism having one or more operating parameters;”

Petitioner asserts Clem’s fitness device 32 is an exercise mechanism comprising a movable element for movement in performance of exercise by a user, and having one or more operating parameters. *See* Pet. 43–44 (citing

Ex. 1012, Fig. 2A, 3:64–66, 4:8–59); Ex. 1003 ¶¶ 382–386. Patent Owner does not presently dispute this contention, and it is sufficiently supported by the cited evidence to justify institution of review. In particular, Clem’s device 32 may be a treadmill, with a movable tread, having an adjustable resistance parameter. *See* Ex. 1012, Fig. 2A, 3:64–66, 4:8–21.

“(b) interface means, communicating with the exercise mechanism, for gathering a first signal from the user;”

Petitioner asserts “Clem renders obvious” the interface means of claim 1. Pet. 44. In particular, Petitioner contends the interface means can be found in Clem’s user input 96 of console 94, which Petitioner asserts communicates with controller 28 of treadmill 32 for gathering a first signal from the user, to control operating parameters of the treadmill and set up exercise sessions. *See id.* at 44–46 (citing Ex. 1012, Fig. 3, 2:42–3:15, 3:47–49, 5:1–24, 7:5–7 (claim 17), 8:9–12 (claim 23)); Ex. 1003 ¶¶ 387–392. Petitioner particularly asserts user input 96 permits the user to input commands regarding selection of a control program, as well as a video / audio upload for real-time communication. Pet. 44–45.

Petitioner then adds: “To the extent not explicit, a [person of ordinary skill in the art] would have understood that the user input on the console requires receiving a signal from the user.” *Id.* at 46; Ex. 1003 ¶ 393.

Petitioner argues “Figure 3 shows no other location for the user to input a signal and the user input on the console is the most likely and convenient location for” a user to input information, as disclosed by Clem. Pet. 46 (citing Ex. 1012, code (57), 2:42–3:15, 3:47–49, 7:5–7 (claim 17), 8:9–12 (claim 23)); Ex. 1003 ¶¶ 391–393. Petitioner, thus, concludes a person of ordinary skill in that art “would have understood the ‘user input’ portion of

the console is able to receive a signal from the user and communicate it to” controller 28 of treadmill 32. Pet. 46; Ex. 1003 ¶¶ 391–393.

Patent Owner argues Petitioner’s reliance on Clem’s user input 96 as the interface means of claim 1 is misplaced. *See* Prelim. Resp. 50–52. Patent Owner asserts “there is no discussion of the ‘user input 96’ in Clem,” as “neither ‘user input’ nor ‘96’ appear anywhere in Clem except in Figure 3.” *Id.* at 50–51. Patent Owner then focuses on Clem’s claim 23, which recites “an interactive interface” for entering “commands related to the database” (Ex. 1012, 8:9–12), and faults the Petition and Dr. Houh for failing to explain why such “commands” might be “akin to a ‘first signal from the user’” as required of the interface means of the ’062 patent. Prelim. Resp. 51 (citing Ex. 1003 ¶ 389). “For example, the Petition and Dr. Houh do not explain that ‘commands related to the database’ are disclosed in Clem as being ‘from the user.’” *Id.*

Based on the present record, we do not agree with Patent Owner’s opposition. Clem’s Figure 3 clearly identifies “USER INPUT” 96 as part of console 94 of treadmill 32. *See* Ex. 1012, Fig. 3, 3:64–66, 5:16–18. Patent Owner correctly observes that Clem’s written description does not discuss user input 96. However, Clem describes how microprocessor 72 uses input/output circuitry 76 to receive signals from the Internet and from sensors 78 and 80, and to output control signals to various treadmill components such as display 98 of console 94, drive motor 16, and incline motor 36. *See id.* at 5:1–37. These signal pathways are all represented by arrows in Figure 3, and Figure 3 also includes a similar arrow leading from user input 96 to input/output circuitry 76. Based on these disclosures, a person of ordinary skill in the art would have understood that Clem’s

treadmill incorporates user input 96 so that the user of the treadmill may input information to be received by microprocessor 72.

Clem additionally discloses various kinds of information that the user of treadmill 32 may input into microprocessor 72. For example, “*a user . . . can interact* on-line with a live fitness expert located at the web site 12 to engage in a real time two way communication regarding matters related to fitness,” and “*interactively obtain* the control information from a computer located at the web site 12.” Ex. 1012, 2:53–3:7 (emphases added). Further: “Device information such as speed, incline and suspension can also be *communicated by the user.*” *Id.* at 3:47–48 (emphasis added). Based on the present record, we agree with Petitioner’s contention and Dr. Houh’s testimony that a person of ordinary skill in the art, upon reading these disclosures of user inputs to Clem’s treadmill, would understand that user input 96 of Figure 3 could be used as a mechanism for the user to make these disclosed inputs. *See* Pet. 44–46; Ex. 1003 ¶¶ 387–392.

Clem’s claim 23 additionally describes “an interactive interface” for entering “commands related to the database.” Ex. 1012, 6:11–33 (parent claim 1), 8:9–12 (claim 23). Based on the present record, we find that these commands appear to be yet another example of information that a user may input to Clem’s treadmill 32 with user input 96. Patent Owner objects that Petitioner and Dr. Houh do not explain why these commands “would not have been understood . . . to be ‘database commands,’ such as Structured Query Language (SQL) commands (SELECT, SELECT FIELD, etc.).” Prelim. Resp. 51–52 (citing Ex. 2008, Fig. 3, 12:50–13:10). However, all that claim 1 of the ’062 patent requires in this regard is “gathering a first signal from the user.” Ex. 1001, 49:56–57. Although the burden rests with

Petitioner, it is not clear to us why a database command, such as an SQL command, could not correspond to “a first signal” as broadly recited in claim 1.

We further determine, based on the present record, that Petitioner’s reliance on Clem’s user input 96 as the interface means of claim 1 is sufficiently supported by the cited evidence to justify institution of review. In particular, we have construed the interface means to cover at least a keyboard, and equivalents thereof under § 112 ¶ 6. *See supra* Section V.C.2(a). Clem’s Figure 2A illustrates a user using treadmill 32, including a control panel (which would include input keys or an equivalent) next to where the user’s hands are grasping treadmill 32, thereby disclosing a keyboard structure or an equivalent.

Clem’s interface means must further perform the function(s) recited in claim 1. As discussed above (*see supra* Section V.C.2(a)), the parties disagree concerning what these function(s) might be. However, at the most limiting, the claimed function(s) include communicating with the exercise mechanism, and gathering a first signal from the user. *See id.* In these regards, as already discussed above, Clem reflects that user input 96 could be used as a mechanism for the user to make various kinds of inputs to microprocessor 72 of treadmill 32. Thus, even if we were to adopt a limited construction of the claimed function(s), Clem still appears to disclose the interface means, based on the present record.

Petitioner next contends “a user interface that receives a signal and communicates with the exercise device was within the knowledge of a [person of ordinary skill in the art].” Pet. 47; Ex. 1003 ¶ 393. In support, Petitioner cites disclosures in Clem, Brewer, and Studor. Pet. 47 (citing

Ex. 1012, Fig. 3, 1:26–28, 8:9–12 (claim 23); Ex. 1006, Fig. 1; Ex. 1005, 6:3–11). Based on these disclosures, Dr. Houh testifies that “[t]o the extent Clem does not explicitly teach [the interface means of claim 1], a [person of ordinary skill in the art] would have been motivated to include an interface for gathering signals from a user into the treadmill in Clem,” in order “to accept the selection of a program to control the speed and/or incline of the treadmill.” Ex. 1003 ¶ 393.

Patent Owner objects that the Petition’s foregoing reliance on Brewer and Studor fails to comply with 35 U.S.C. § 311 and § 312. *See* Prelim. Resp. 33–38. Patent Owner asserts the Petition’s second ground identifies only Clem and Hickman as the prior art at issue, and then “relies improperly on” Brewer and Studor. *Id.* at 33–34, 36–37 (citing Pet. 47). In Patent Owner’s view, this “effectively multiplies the actual number of grounds asserted,” without the requisite specificity, meriting denial of institution. *Id.* at 33–34, 38 (citing *Adaptics, supra*); 37 C.F.R. § 42.22(a)(2)). Patent Owner also asserts the Petition is fatally defective for failing to “address[] why a [person of ordinary skill in the art] would combine” Brewer and Studor with Clem to reach the invention of claim 1. *Id.* at 33, 36–37.

We do not agree, on the present record, that Petitioner’s reliance on Brewer and Studor in the second ground is improper or insufficient. First, Petitioner’s reliance on Brewer and Studor is limited “[t]o the extent Clem does not explicitly teach” the interface means of claim 1. Ex. 1003 ¶ 393; Pet. 47. At this stage of the proceeding, as discussed above, we have preliminarily concluded that Clem explicitly teaches the interface means of claim 1 as user input 96, so Brewer and Studor are not necessary to justify institution of review.

Second, even if Petitioner’s reliance on Brewer and Studor were necessary to justify institution of review, the Petition explains Clem provides that “[t]he user can . . . manually adjust the resistance level” of treadmill 32, which a person of ordinary skill in the art would understand involves “a user interface that receives a signal and communicates with the exercise device.” Pet. 47 (quoting Ex. 1012, 1:26–28); Ex. 1003 ¶ 393. The Petition then cites Brewer as “showing console with user interface” and cites Studor as disclosing a “user interface . . . [which] affords users interactivity to control audio-video environments.” Pet. 47 (citing Ex. 1006, Fig. 1, and quoting Ex. 1005, 6:3–11). Dr. Houh is permitted to use the disclosures in references such as Brewer and Studor to support his testimony that a person of ordinary skill in the art would have been motivated to include a user interface in Clem, in order “to accept the selection of a program to control the speed and/or incline of the treadmill.” Ex. 1003 ¶ 393.

Thus, even though the Petition does not identify Brewer and Studor as prior art references applied with Clem and Hickman in the second ground (*see* Pet. 2, 41), the Petition’s analysis clearly articulates Petitioner’s reliance on Brewer and Studor in the challenge to claim 1 (*see id.* at 47 (citing Ex. 1003 ¶ 393)). This satisfies the particularity requirements of 35 U.S.C. § 312(a)(3) and 37 C.F.R. § 42.22(a)(2). In this circumstance, we will not exalt form over substance to deny a sufficiently articulated petition simply because the titular identification of the ground does not say “Brewer” or “Studor.” Patent Owner’s reliance on the Board’s decision in *Adaptics*, *supra*, does not persuade us otherwise, because in this case there are at most three references (Clem, Brewer, and Studor) in play.

“(c) communicating means, communicating with the interface means, for receiving a packetized second signal from a remote source over a network, the packetized second signal including one or more packetized control signals; and”

Petitioner asserts “Clem renders obvious” the communicating means of claim 1. Pet. 47. In particular, according to Petitioner, Clem’s treadmill 32 has communicating means (i.e., in Figure 1, the combination of network connection device 18, fitness equipment interface 22, and controller 28) communicating with the interface means (i.e., user input 96), and receiving a second signal from a remote source (i.e., web site 12) over a network (i.e., the Internet). *See id.* at 47–48 (citing Ex. 1012, Figs. 1 and 3, 3:21–47, 5:15–23); Ex. 1003 ¶¶ 395–402. Patent Owner does not presently dispute this contention, and it is sufficiently supported by the cited evidence to justify institution of review. *See, e.g.*, Pet. 47–48 (annotating Clem’s Figures 1 and 3 to illustrate Petitioner’s contention).

Petitioner next contends that the signals received by Clem’s treadmill 32 from web site 12 include control signals, as claimed, because the signals control the speed and incline of Clem’s treadmill 32. *See* Pet. 49 (citing Ex. 1012, code (57), Fig. 3, 2:34–53, 2:66–3:7, 3:47–63, 5:17–22); Ex. 1003 ¶¶ 406–407. Patent Owner does not presently dispute this contention, and it is sufficiently supported by the cited evidence to justify institution of review. *See, e.g.*, Ex. 1012, code (57) (“Control information is applied to the communications system by the [remote] control location in response to the user location information for transmission to the controller to control the exercise device[.]”), 2:34–48 (indicating web site 12 transmits “control information” to fitness device 32 “to control, for example, drive motor 16 and incline motor 36”), 2:66–3:7, 3:47–49.

Petitioner further contends that the signals received by Clem's treadmill 32 from web site 12 "are *packetized* signals because they are sent over the internet." Pet. 50 (emphasis added); Ex. 1003 ¶¶ 403–405. Patent Owner does not presently dispute this contention, and it is sufficiently supported by the evidence to justify institution of review. *See* Ex. 1012, 2:40–42 (describing Fig. 1), 5:17–23 (describing Fig. 3); Ex. 1003 ¶¶ 42–44, 403–405.

We further determine, based on the present record, that Petitioner's reliance on Clem as disclosing the communicating means of claim 1 is sufficiently supported by the cited evidence to justify institution of review. *See* Pet. 47–50; Ex. 1003 ¶¶ 395–408. Here, the parties have disagreed whether the corresponding structure is a network interface or a modem (Petitioner's position) or a computer (Patent Owner's position). *See supra* Section V.C.2(b). Either way, based on the present record, it appears that Clem's network connection device 18, fitness equipment interface 22, and controller 28 have the same structure, or an equivalent thereof under § 112 ¶ 6. *See* Ex. 1012, Fig. 1, 2:34–52, 3:21–27, 3:35–40.

Clem's communicating means must further perform the function(s) recited in claim 1. As discussed above (*see supra* Section V.C.2(b)), the parties disagree concerning what these function(s) might be. However, at the most limiting, the claimed function(s) include communicating with the interface means, and receiving a packetized control signal from a remote source over a network. *See id.* In these regards, based on the present record, it appears that Clem's network connection device 18, fitness equipment interface 22, and controller 28 communicate with Clem's input device 96. *See* Ex. 1012, Figs. 1 and 3. It also appears that Clem's network connection

device 18, fitness equipment interface 22, and controller 28 receive a control signal from a remote source over a network, as already discussed above.

Thus, even if we were to adopt a limited construction of the claimed function(s), Clem still appears to disclose the communicating means, based on the present record.

“(d) means, responsive to the packetized second signal, for controlling the operating parameters of the exercise mechanism.”

Petitioner asserts “Clem renders obvious” the means for controlling of claim 1. Pet. 50. In particular, according to Petitioner, Clem’s treadmill 32 has means (i.e., controller 28), responsive to the control signals received from web site 12, for controlling the operating parameters of treadmill 32. *See id.* at 50–51 (citing Ex. 1012, Fig. 3, 2:44–47, 2:60–3:7, 4:30–59); Ex. 1003 ¶¶ 409–410. In particular, according to Petitioner, Clem’s controller 28 controls the speed and incline of treadmill 32 in response to the control signals. Pet. 50–51; Ex. 1003 ¶¶ 409–410. Patent Owner does not presently dispute these contentions, and they are sufficiently supported by the cited evidence to justify institution of review. *See, e.g.*, Ex. 1012, Fig. 3, 2:44–47, 2:66–3:7, 4:30–59.

The parties have disagreed whether the corresponding structure of the means for controlling is a controller such as a general-purpose computer or processor (Petitioner’s position) or a controller such as a motor, solenoid, or other electrically-driven actuator (Patent Owner’s position). *See supra* Section V.C.2(c). Either way, based on the present record, it appears that Clem’s controller 28 has the same structure, or an equivalent thereof under § 112 ¶ 6. *See* Ex. 1012, Figs. 1 and 3, 4:7–14, 4:28–33, 4:44–49, 5:1–15.

In particular, controller 28 uses input/output circuitry 76 to control electrically driven motors 16 and 36 of treadmill 32. *See id.*

Clem's means for controlling must further perform the function(s) recited in claim 1. As discussed above (*see supra* Section V.C.2(c)), the parties disagree concerning what these function(s) might be. However, at the most limiting, the claimed function(s) include responding to the packetized control signal, and controlling the operating parameters of the exercise mechanism. *See id.* In these regards, based on the present record, it appears that Clem's controller 28 performs all of these functions. *See* Ex. 1012, Fig. 3, 2:44–47, 2:60–3:7, 4:30–59. Thus, even if we were to adopt a limited construction of the claimed function(s), Clem still appears to disclose the means for controlling, based on the present record.

Conclusion as to Claim 1

For the foregoing reasons, and based on the present record, we conclude Petitioner has provided sufficient argument and evidence in relation to the proposed obviousness of claim 1 over Clem and the knowledge of a person of ordinary skill in the art or Hickman, to demonstrate a reasonable likelihood that Petitioner would prevail with respect to this challenge at trial.

3. Independent Claim 29

Independent claim 29 has been disclaimed by Patent Owner, but it is still is at issue here because Petitioner challenges several of its dependent claims. Petitioner's and Patent Owner's arguments concerning claim 29 have all been addressed above in the context of claim 1. *See* Pet. 12–14, 41–51; Prelim. Resp. 33–40, 50–52. For the reasons provided above, based

on the present record, we conclude Petitioner has provided sufficient argument and evidence in relation to the proposed obviousness of claim 29's subject matter over Clem and the knowledge of a person of ordinary skill in the art, to demonstrate a reasonable likelihood that Petitioner would prevail with respect to challenging the dependent claims at trial.

4. *Dependent Claims 3–5, 8–11, 15, 16, 21–23, 26–28, 30, 36, 38, 40, 45, 46, and 48*

As discussed above, pursuant to USPTO policy implementing *SAS*, we must either institute as to all claims challenged in the petition and on all grounds in the petition, or deny institution entirely. *See supra* Section V.D.4 (citing CTPG 5–6, 64). Thus, because we have decided to grant institution on Petitioner's second ground against the patentability of claim 1, we must do the same for the other claims.

a) *Whether the Petition Satisfies the Particularity Requirement*

Nonetheless, we acknowledge Patent Owner's argument that the Petition fails to comply with 35 U.S.C. § 311 and § 312 in relation to dependent claims 4, 8–10, 16, 21–23, 30, and 45. *See* Prelim. Resp. 33–40. Patent Owner asserts the Petition's second ground identifies only Clem and Hickman as the prior art at issue, and then the Petition "relies improperly on" various additional prior art references when addressing these dependent claims. *Id.* at 33–34, 37 (citing Pet. 52–53 (claim 4), 56 (claims 8 and 30), 58–60 (claims 9 and 10), 63 (claim 16), 65 (claims 21–23), 72 (claim 45)). In Patent Owner's view, this "effectively multiplies the actual number of grounds asserted," without the requisite specificity, meriting denial of institution. *Id.* at 33–34, 38 (citing *Adaptics*, at 21–23; 37 C.F.R.

§ 42.22(a)(2)). Patent Owner also asserts the Petition is fatally defective for failing to explain how these other prior art references would have been combined with Clem and Hickman. *Id.* at 37–38.

We do not agree, on the present record. For claim 4, Petitioner cites Shea (Exhibit 1019) along with Hickman for the proposed obviousness of modifying Clem to synchronize a control signal with audio or visual signals. *See* Pet. 52–53. For claims 8 and 30, Petitioner cites Studor, French (Exhibit 1015), and Bobick for the proposed obviousness of modifying Clem’s interface means to include audio and video input devices. *See* Pet. 56. For claim 9, Petitioner cites Andrus (Exhibit 1016), Brewer, and Watterson (Exhibit 1022) for the proposed obviousness of modifying Clem’s interface means to include a controller. *See* Pet. 58–59. For claim 10, Petitioner cites Bobick, French, and Cipolla for the proposed obviousness of modifying Clem’s interface means to include a video camera integrally formed with the treadmill. *See* Pet. 60. For claim 16, Petitioner cites Studor and Shea for the proposed obviousness of modifying Clem’s communication system to use a memory to stored the second signal. *See* Pet. 63. For claims 21–23, Petitioner cites Shea and Studor along with Hickman for the proposed obviousness of modifying Clem’s means for reproducing the second signal to include audio and video output devices. *See* Pet. 65. For claim 45, Petitioner cites Fawcett and Cheng along with Hickman for the proposed obviousness of modifying Clem to include an activating diagnostic control. *See* Pet. 72.

Based on the foregoing review of the Petition, we conclude that even though the Petition does not identify Shea, Studor, French, Bobick, Andrus, Brewer, Watterson, Cipolla, Fawcett, and Cheng as being applied with Clem

and Hickman in the second ground (*see* Pet. 2, 41), the Petition’s analysis clearly articulates Petitioner’s reliance on these references in connection with the dependent claims. This satisfies the particularity requirements of 35 U.S.C. § 312(a)(3) and 37 C.F.R. § 42.22(a)(2). In this circumstance, we will not exalt form over substance to deny a sufficiently articulated petition. Dr. Houh also relies on these references to support his testimony that a person of ordinary skill in the art would have been motivated to modify Clem as recited in the dependent claims. Patent Owner’s reliance on the Board’s decision in *Adaptics, supra*, does not persuade us otherwise, because in the present case the various references are cited as alternative disclosures of one claim limitation in one dependent claim, which we found easy to follow in reviewing the Petition.

b) The Merits of Petitioner’s Case for Claim 10

Patent Owner argues Petitioner’s case for the obviousness of dependent claim 10 falls short on the merits. *See* Prelim. Resp. 52–53.

Claim 10 recites: “An exercise device as recited in claim 1, wherein the interface means comprises a video camera integrally formed with the exercise device.” Ex. 1001, 50:24–26.

Petitioner correspondingly contends a person of ordinary skill in the art would have understood that a user of Clem’s treadmill 32 would use its console 94 to input “video and audio information” that Clem discloses for “real time ‘two way [video] communication’ with” a fitness expert at web site 12. Pet. 59–60 (citing Ex. 1012, Fig. 3, 2:53–65); Ex. 1003 ¶¶ 468–469. Petitioner asserts that a person of ordinary skill in the art, “[t]o provide such video input . . . would have included an integrated camera into” Clem’s

console 94 “to record real-time video while the user is working out.” Pet. 60; Ex. 1003 ¶ 470. Petitioner adds that “[h]aving cameras as video inputs were known” and cites Bobick, French, and Cipolla in support. Pet. 60 (citing Ex. 1008, 15:3–11; Ex. 1015, 10:46–53; Ex. 1018, 1:6–10, 3:29–31); Ex. 1003 ¶¶ 471–472.

Patent Owner first argues Petitioner errs in alleging that Clem discloses a “video input.” Prelim. Resp. 52. We disagree, based on the present record. Clem describes “*real time two way communication*” between a user of Clem’s treadmill and a fitness expert over the Internet, and Clem states “[t]he communication can include the *uploading* and downloading of *video* and audio information.” Ex. 1012, 2:34–42, 2:53–65 (emphases added). This appears to be sufficient disclosure to support Petitioner’s contention that Clem calls for a video input at or near Clem’s treadmill.

Patent Owner secondly argues Petitioner’s case for the obviousness of using *a video camera integrally formed with* Clem’s treadmill to implement Clem’s video input “lack[s] proper support.” Prelim. Resp. 52. According to Patent Owner, Petitioner may not rely on Bobick, French, and Cipolla to supply this missing limitation of claim 10, because they are not listed as part of the Petition’s second ground along with Clem and Hickman. *See id.* at 52–53. We do not agree with this argument, for reasons provided above.

c) The Merits of Petitioner’s Case for Claim 46

Claim 46 recites an exercise device comprising “a diagnostic control . . . activating a connection with a communication system to check the status of the exercise device” (parent claim 45), “wherein the diagnostic control activates a downloading process to retrieve one or more software

updates from the communication system” (claim 46). Ex. 1001, 52:37–44; *id.* at Cert. of Corr. pg. 5.

In addressing parent claim 45, Petitioner contends that “[a]lthough Clem does not explicitly disclose the claimed ‘diagnostic control,’ Hickman does.” Pet. 71–72 (citing Ex. 1013, 10:38–56); Ex. 1003 ¶¶ 544–546. In particular, according to Petitioner, Hickman discloses a “stationary bicycle and remote system” which “activat[es] a download process to retrieve one or more software updates.” Pet. 71–72; Ex. 1003 ¶¶ 545–546. Petitioner then asserts a person of ordinary skill in the art “would modify Clem to include Hickman’s diagnostic control system because such a system would have ensured use of the latest software, leading to optimal performance of the system” and providing other advantages. Pet. 72; Ex. 1003 ¶¶ 548–552. The Petition then cites Fawcett and Cheng as establishing that “such a ‘*diagnostic control*’ as claimed was well-known.” Pet. 72 (citing Ex. 1020, code (57), 1:38–52; Ex. 1021, 3:25–45); Ex. 1003 ¶¶ 550–552. Moreover, according to Petitioner, a person of ordinary skill in the art “would have known that *updating software via a network connection* rather than physical media would be more desired, given the increased burden on the user.” Pet. 72 (emphasis added); Ex. 1003 ¶ 552.

In next addressing claim 46, the Petition simply states: “As discussed in Ground 2 Claim 45, Clem in view of Hickman renders obvious this limitation.” Pet. 72. Dr. Houh’s declaration testimony includes ten paragraphs, extending over almost seven pages, of discussion concerning claim 46. Ex. 1003 ¶¶ 554–563 (pgs. 282–288).

Patent Owner asserts “the Petition fails to address the limitation [of claim 46] except through improper incorporation of Dr. Houh’s testimony.”

Prelim. Resp. 53. Patent Owner also contends the Petition’s consideration of parent claim 45 “makes no mention of an ‘update’ much less a ‘downloading process to retrieve one or more software updates from the communication system’” as recited in claim 46. *Id.*

We conclude that, to the extent the Petition’s case for claim 46 relies on paragraphs 554–563 of Dr. Houh’s declaration, this is an improper incorporation by reference. *See* 37 C.F.R. § 42.6(a)(3) (“Arguments must not be incorporated by reference from one document into another document.”).

However, the Petition’s case for claim 46 clearly refers back to the analysis for the parent claim 45. *See* Pet. 72. We conclude that the Petition’s analysis of claim 45 applies equally well to its dependent claim 46. The Petition addresses the subject matter of claim 46 by asserting it would have been obvious to apply Hickman’s “*activating a download process to retrieve one or more software updates,*” including “*updating software via a network connection* rather than physical media.” *Id.* at 71–72 (emphases added). Thus, we do not agree with Patent Owner’s contention that the Petition fails to address the subject matter of claim 46.

d) The Merits of Petitioner’s Case for Claims 3, 11, 26, 27, and 48

Patent Owner argues: “The Petition’s treatment of at least claims 3, 11, 26, 27, and 48 is deficient for at least the same reasons as claim 3, as discussed above with respect to Ground 1.” Prelim. Resp. 53. However, there is no such previous discussion in the Preliminary Response. We therefore do not consider this argument further.

e) Conclusion

For the foregoing reasons, we institute review as to whether dependent claims 3–5, 8–11, 15, 16, 21–23, 26–28, 30, 36, 38, 40, 45, 46, and 48 are unpatentable as having been obvious over Clem and the knowledge of a person of ordinary skill in the art or Hickman.

VI. CONCLUSION

For the above reasons, we determine the information presented in the record establishes there is a reasonable likelihood that Petitioner would prevail with respect to at least one claim of the '062 patent challenged in the Petition. Accordingly, we institute an *inter partes* review of claims 1, 3–5, 8–11, 15, 16, 21–23, 26–28, 30, 36, 38, 40, 45, 46, and 48 on the two grounds presented in the Petition.

At this preliminary stage, the Board has not made a final determination with respect to the patentability of the challenged claims or any underlying factual or legal issue. The Board's final determination will be based on the record as developed during the *inter partes* review.

VII. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review is instituted for claims 1, 3–5, 8–11, 15, 16, 21–23, 26–28, 30, 36, 38, 40, 45, 46, and 48 on all grounds presented in the Petition; and

FURTHER ORDERED that pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is hereby given of the institution of a trial, which commences on the entry date of this decision.

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